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Original Articles

SURVIVAL OF ENGRAFTED TISSUES

A, THYROID (INCLUDING PARATHYROID); B, KIDNEY (INCLUDING ADRENAL) *

C. C. GUTHRIE, M.D.

Professor of Physiology, University of Pittsburg

PITTSBURG, PA.

A. THYROID

For a long time it has been known that thyroid tissues may be successfully engrafted.[1] Kocher[2] (1883) and Schiff[3] (1884), in the early eighties, the former using dogs and the latter operating on man, obtained temporary benefit by grafting after removal of the thyroids.

Fig. 1.—Right thyroid lobe of Dog 60, thirty-three months after removal and replacement, with reversal of circulation in superior thyroid artery and vein.

In 1892 Eiselsberg[4] reported anatomically and physiologically successful results on cats. A little later Cristiani[5] reported successful results on numerous species of animals. All such transplantations have been performed without anastomosis of the blood-vessels, so that the results have been best when thin masses of tissues have been employed.[5]

The data we have to record were obtained by removing one entire thyroid lobe in a young 35-pound dog and replacing it, after washing out its vessels with salt solution, anastomosing the peripheral end of the superior thyroid vein to the central end of the corresponding artery; and the peripheral end of the artery to the central end of the vein, thus establishing a reversed circulation through these vessels. Great swelling of the gland occurred, and some infection ensued, but the swelling soon disappeared and the wound healed. The dog never showed any general symptoms indicative of deranged thyroid metabolism. Two years and nine months later the animal was killed with chloroform and the specimen examined. The gross relations are shown in Figure 1.

Anatomically, the left thyroid lobe was moderately enlarged and presented the appearance of colloidal goiter. The right lobe was quite fibrous and dense to the touch and adherent to surrounding structures. On dissection, the superior thyroid vessels were found intact. Owing to the fibrous adhesions it was difficult to make a satisfactory dissection of the vein. The artery is shown in Figure 1, and the point of union of artery to vein is shown in the same illustration.

Fig. 2.—Microphotograph thyroid lobe (Dog 60), not operated on. Note large amount of granular colloid (A), and small amount of clear colloid (B) and fibrous relations.

Microscopically, the lobe which had not been operated on presented the appearance of colloidal goiter (Fig. 2). The lobe which had been operated on showed an enor-

*From the Physiological Laboratories of Washington and Pittsburg Universities.

1. For literature, see Vincent: Lancet, London, Aug. 11 and 18, 1906.
2. Kocher: Cor.-Bl. f. schweiz. Aerzte, 1895; quoted by Vincent: Lancet, London, Aug. 11 and 18, 1906.
3. Schiff: Rev. Med. de la Suisse rom., 1884, p. 438; quoted by Vincent, Lancet, London, Aug. 11 and 18, 1906.
4. Eiselsberg: Wien. klin. Wchnschr., 1892, No. 5, p. 81.
5. Cristiani: Compt. rend. Soc. de biol., 1894, p. 716; Jour. de physiol. et path. gén., 1901, p. 204.

mously thickened connective tissue capsule (Fig. 3). The substance of the gland showed an abundance of normal staining colloid. The walls of the acini were considerably thicker than normal, due in part to strands of connective tissue. Otherwise the histologic elements themselves appeared normal, the arrangement only being abnormal.

Considering (1) that the auto-engrafted tissue was perfused with saline solution;[6] (2) that the restored circulation was in the reverse of the normal direction thus contributing to the hyperemia; and (3) that the wound became infected, we may hope, since all of these factors probably are against the best result, that similar operations performed under more favorable conditions may yield even better results.

Parathyroid.—The results on the parathyroid tissue have not yet been sufficiently studied to permit their presentation at this time. Recently, however, an interesting paper by Halsted[7] has appeared in which completely successful parathyroid grafting is reported. Since I shall discuss these results in another place,[8] it will be sufficient to state that the survival of an exceedingly small fragment of such tissue seems adequate to prevent the appearance of the symptoms of thyroparathyroidectomy (tetany, etc.). For example, after transplanting two parathyroid bodies[9] and removal of the remainder of the thyroid tissues, the dog remained in good health.[9] Three months later but one of the engrafted parathyroid bodies could be found. This was removed and preserved. "The dog died of tetania parathyreopriva on the second (or third?) day after the operation, thus proving the functional state of the removed autograft."[10] This tissue was then cut for microscopic examination, all sections being preserved serially. The total number of sections was 150, yet the parathyroid tissue was found only in the last 20 sections. The thickness of the sections is not stated, but probably it did not exceed 30 microns. Taking this as an outside estimate, then in one dimension the parathyroid tissue measured not over 0.6 mm. As shown in one of the plates accompanying the article (No. III, it would seem from the dog number, the reference to No. II probably being an oversight by the author), the parathyroid tissue is somewhat elliptical in shape. In the long diameter it measured 40 mm. As this is magnified 90 times (diameters, I take it), then 0.44 mm. is approximately the actual dimension. Roughly, then the mass of parathyroid tissue measured 0.6 by 0.44 mm., a spherical mass having a diameter less than the thickness of an ordinary pin. From this standpoint, the parathyroid tissue would seem to be the most precious of any tissue in the body of which we have specific information. The weight of the dog would be of interest in this connection,

Fig. 3.—Microphotograph thyroid lobe (Dog 60), operated on. Note clear colloid (A), and enormous amount of fibrous tissue (B). No granular colloid.

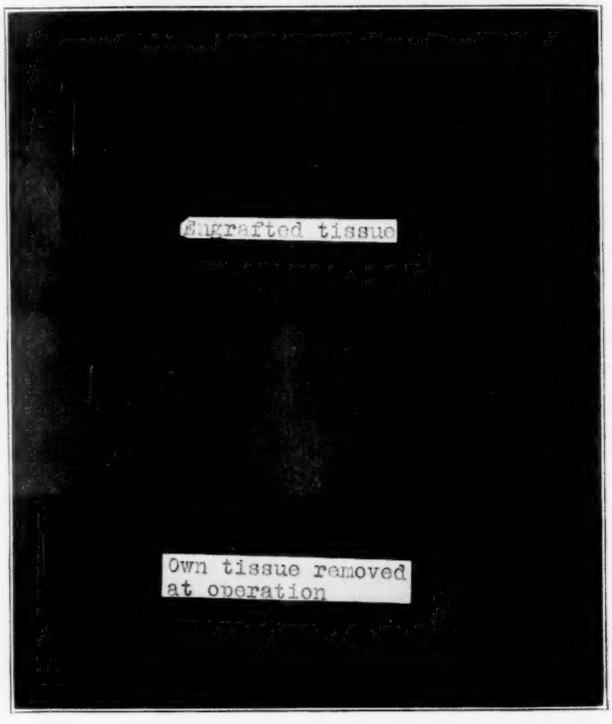


Fig. 4.—Microphotograph showing infiltration of tissue in boundary region (to the right) and more profound degenerative changes in cortical region (to the left) of iso-engrafted kidney seventeen days after the operation (cat). Small pieces of one of the kidneys removed at the operation, and of an engrafted kidney, were mounted on one block and sectioned, stained and photographed together for comparison.

but it was not included in the protocol. It may be remarked that some thyroid tissue is figured in both of the plates accompanying the paper.

B. KIDNEYS

Only transplantation of renal tissue with anastomosis of blood-vessels will be considered, since a very important function of the kidney is so well known to be the separation from the blood of and excretion of waste products, retention of which is rapidly detrimental or fatal to the animal. Obviously, then, to approach anywhere near to the normal conditions of such an organ, it is necessary to provide a functional as well as a nutrient blood-supply, and to provide a channel for the escape of the excretions to the outside of the body; otherwise a functional test of the operation is impossible.

6. Guthrie, C. C.: Some Physiologic Aspects of Blood-Vessel Surgery, THE JOURNAL A. M. A., 1908, LI, 1658; The Harmful Action of Physiologic Salt Solution on Animal Tissues, Washington Univ. Bull., 1908, VII, 40.

7. Halsted, W. S.: Autotransplantation and Isotransplantation, in Dogs, of the Parathyroid Glandules, Jour. Exper. Med., 1909, xi, 175.

8. Manuscript as yet unpublished.

9. I am unable to find this specificlally stated in the protocol (loc. cit.), p. 191, Dog 11, but the statement that "the dog is, presumably, reduced to the two transplanted glands," as well as the nature and result of the experiment, clearly indicates it.

10. Halsted: Jour. Exper. Med., 1909, xi, 192.

Also, not only for anatomic reasons (connections of tubules, etc.), but for the reason that an animal cannot long survive mere excision of renal tissue in excess of three-fourths of the total amount,[11] for, in spite of a polyuria, a fatal derangement of metabolism follows. That the protein metabolism is particularly affected is indicated by the rapid wasting of the muscular tissues and large amounts of urea excreted.[11]

This upsetting of the metabolism has been attributed by Bradford to lack of internal renal secretion. It would

Fig. 5.—Degenerative changes in the tubular epithelium of an engrafted kidney.

seem from this standpoint that the internal secretion of less than one-half of one kidney is insufficient to maintain life. It is necessary, therefore, to engraft one-half or more of a kidney, fulfilling at the same time the requirements as to a functional circulation and to an excretory channel. A mass of tissue this large could not possibly survive without attention to the blood-vessels, at least in any but very small animals, even if there were no other valid reason against employment of the simple method. Since it is well known that one

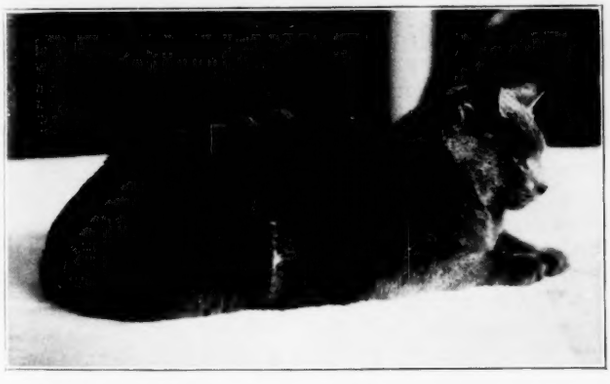


Fig. 6.—Cat from which one kidney was removed and in its place a kidney from another cat engrafted. Photographed about one year later. The animal did not survive the functional test. (THE JOURNAL A. M. A., 1908, li, 1658.)

kidney is adequate for maintaining life, and since the entire kidney is easiest to handle, such operations should be performed with the entire organ, or both.

Florescо[12] seems to have been the first to publish a feasible method of transplanting the entire kidney with anastomosis of the blood-vessels and report successful results. He used dogs. His transplanted kidneys were not, so far as I am aware, successfully put to the functional test, i. e., not all of the original kidney tissue was removed; and, therefore, his results are not conclusive. Later, in 1905, Carrel and I engrafted a kidney into the cervical region in a manner similar to that practiced by Ullmann[13] with excellent temporary result as regards the circulation and preservation of excretory function. The renal artery was connected with the carotid and the renal vein with the jugular. The ureter was made to open into the esophagus. A few days after the operation the dog was anesthetized and the transplanted kidney examined and compared with the kidney left in the normal situation. It presented an exaggerated circulatory and secretory activity.[14]

After having devised a method of transplanting tissues *en masse*, i. e., with their surrounding structures, obtaining an adequate blood-supply by using the parent blood-vessels, e. g., in the case of the kidneys, interposing segments of the aorta and vena cava containing the origins of the renal vessels between the cut ends of the corresponding vessels of the host, we practiced renal isotransplantations on dogs[15] and cats with excellent results

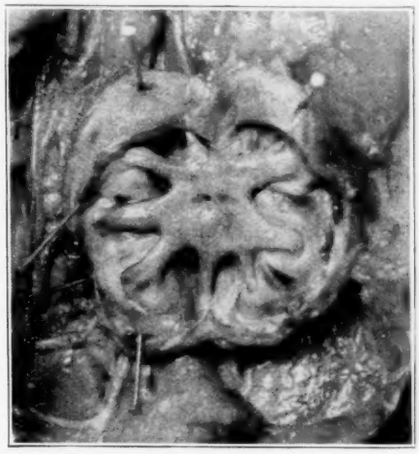


Fig. 7.—Engrafted kidney at post-mortem examination of cat shown in Fig. 6. (THE JOURNAL A. M. A., 1908, li, 1658.)

up to several weeks. But in all of our animals, as well as in all such experiments since reported by Carrel, death has soon terminated the experiment.[16]

Gross histologic examination shows a congestive, hemorrhagic and progressive degenerative process. In the beginning the circulatory change is greatest in the boundary zone, but later the cortex of the kidney presents extensive hemorrhages and degeneration and disappearance of the renal cells (microphotograph of seventeen-day cat, Fig. 4). An early stage of this process is shown in Figure 5.

There seems to be some variation in the results, e. g., rate and magnitude of the pathologic processes. But the degenerative processes are progressive, the seventeen-day specimen showing much more marked degenerative changes than specimens taken after shorter intervals. In all of these experiments the kidneys were subjected to complete anemia and perfusion with saline solution.

11. Bradford: Jour. Physiol., 1889, x, 358.
12. Florescо: Jour. de physiol. et de path. gén., 1904, vii, 27.
13. Ullmann: Wien. klin. Wchnschr., 1901, xv, 281.
14. Science, new series, 1905, xxii, 473.
15. Science, new series, 1906, xxiii, 394.
16. Since this paper was written, Unger (Berl. klin. Wchnschr., June 7, 1909), has reported results of kidney transplantations by this method on seventy dogs and cats. One dog survived eighteen, and one cat ten days. At death the implanted kidneys showed marked nephritis. All the other animals died earlier.

and, as I have pointed out in another paper,[9] these factors have to be taken seriously into account. In a case in which only one kidney was removed from a cat one kidney from another cat was introduced and appropriate vascular and ureteral connections made. This animal did well, as shown by the photograph taken about a year later (Fig. 6). Her remaining original kidney was then removed and she died in a few days with the usual symptoms of renal insufficiency. Figure 7 shows the gross appearance of the kidney.[6] Histologically, only traces of normal structure remain (see microphotograph, Fig. 8), a few glomeruli and tubules having preserved sufficient of their structure for identification. This, so far as I am aware, is the longest observation which has been recorded on an iso-engrafted kidney, and therefore the longest instance of survival of such engrafted renal tissue.

In addition to the period of complete anemia with perfusion to which this kidney was subjected at the time of operation, other factors probably contributed to the disappearance of renal tissue. There was more or less ureteral stenosis, but whether this was due to a lack of

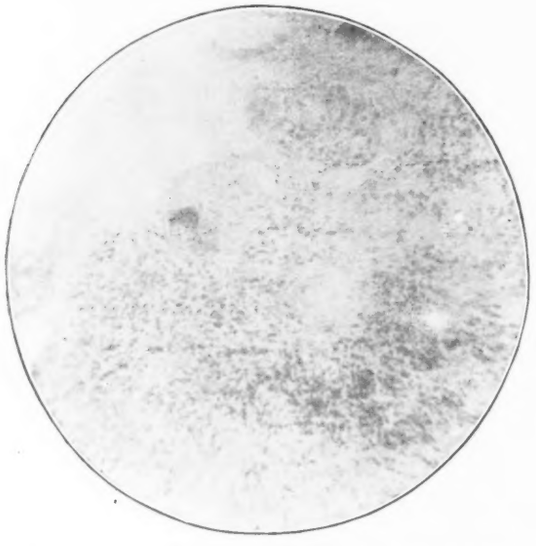


Fig. 8.—Microscopic appearance of kidney shown in Figure 7.

activity on the part of the kidney or to operative fault is, of course, unknown. The same was true of the renal blood-vessels, and, as in the case of the ureter, the primary factor in producing the condition is unknown. That the kidney still received blood is evidenced not only by the examination at the time of the last operation, but by the presence of a relatively large mass of tissue; for when the circulation to a kidney is completely shut off absorption soon occurs.

Adrenals.—As in the case of the parathyroid, our adrenal material has not been sufficiently studied to permit of conclusions. In this connection the results of Busch and von Bergen[17] may be mentioned. These investigators transplanted the tissue into the spleen and some weeks later found good histologic structure in the grafts.

The results of a series of experiments on the thyroid and renal apparatus of fowls will be reserved for a later report.

17. Busch and von Bergen: Proc. Am. Physiol. Soc., Am. Jour. Physiol., 1906, xii, 16.

SUMMARY

Renal isografts with anastomosis of blood-vessels and ureters have so far been only temporarily successful functionally, as shown by the death of the animal within a few weeks. Anatomically, congestive, hemorrhagic and degenerative changes occur so that the normal structure is soon lost. After a year, when sufficient renal tissue was left to perform the required physiologic functions, the transplanted kidney still presented a reminiscence of renal structure, but was totally incapable of adequate functioning, as shown by the death of the animal (cat) on the removal of the original normal kidney.

Thirtieth Street and Brereton Avenue.

RECURRENT ANTERIOR DISLOCATION OF THE SHOULDER

WITH A REPORT OF THREE CASES TREATED BY CAPSULORRHAPHY THROUGH AN AXILLARY INCISION *

T. TURNER THOMAS, M.D.

Associate in Surgery in the University of Pennsylvania; Surgeon to the Philadelphia General Hospital; and Assistant Surgeon to the University Hospital

PHILADELPHIA

As the result of a previous study[1] of this subject I have concluded that the habitual or recurrent dislocation of the shoulder originates in a traumatic dislocation, and that the pathology of the two conditions is essentially the same, the only difference being that in the recurrent dislocation the gap between the margins of the capsular tear produced by the original dislocation becomes filled in by a new relaxed cicatricial portion of capsule of varying thickness. With such a cause the rational treatment would be to shorten the relaxed portion of capsule. The results of such treatment, more than any other factor, should determine whether this is the true pathology or not. In 34 cases which I collected from the literature and published in my first paper, in one case reported recently by Dahlgren,[2] in 2 by Wilmanns[3] and in the first 3 in which I operated, this operation was followed by a positive cure in all except one. My fourth case promises a similar result. In Legueu's case, recurrence occurred twelve weeks after operation from a fall on the affected shoulder in an epileptic attack. I was not inclined to regard this as a failure of the operation to cure, in view of the period intervening between the operation and the recurrence and in view of the severe force probably applied by the fall on the shoulder, as this degree of violence seems to have been sufficient to produce a dislocation in a normal shoulder. More recently I have had the opportunity of operating on a patient in whom each of two previous similar operations had been followed by recurrences. This patient says that he knows of another case in which operation failed to prevent the recurrence of the dislocations.

CASE 1.—*History.*—The patient, a man 42 years old, coal miner, had his first dislocation twenty-five to thirty years ago, when he was caught by a mule between the teeth and thrown some distance. He suffered severe pain and disability in the left shoulder, but did not call a doctor until the following day, when a dislocation of the shoulder was discovered and reduced.

* Read before the Philadelphia County Medical Society, Oct. 27, 1909.

1. Thomas, B. T.: Am. Jour. Med. Sc., March, 1909, Univ. Penn. Med. Bull., March, 1909.
2. Dahlgren: Abstract, Zentralbl. f. Chir., 1909, xxxvi, 55.
3. Wilmanns: Zentralbl. f. Chir., 1909, xxxvi, 429.

The arm was not bound to the side of the body, but was supported from the forearm by a sling for three or four weeks. During this time the patient would take the arm from the sling frequently and use it for eating, washing, etc. He thinks that some years elapsed before the second dislocation took place, but his memory is vague on this point. This was caused by a blow on the outer side of the shoulder by a rather small piece of coal. The following recurrences became more frequent, how frequent he cannot recall. He says that he has had hundreds of them. During one week, recently, the dislocation occurred every day and twice in one day. He has had as many as three in one day. He gave up all work, because he did not dare to move the arm from the side of the body. When the arm is in abduction some twist is necessary to produce the dislocation, but he does not know what that movement is. He has had recurrences in bed during sleep, and for twelve years has been tying his arm to the side of the body on going to bed to prevent the recurrences. He has never had a dislocation when the arm was so tied.

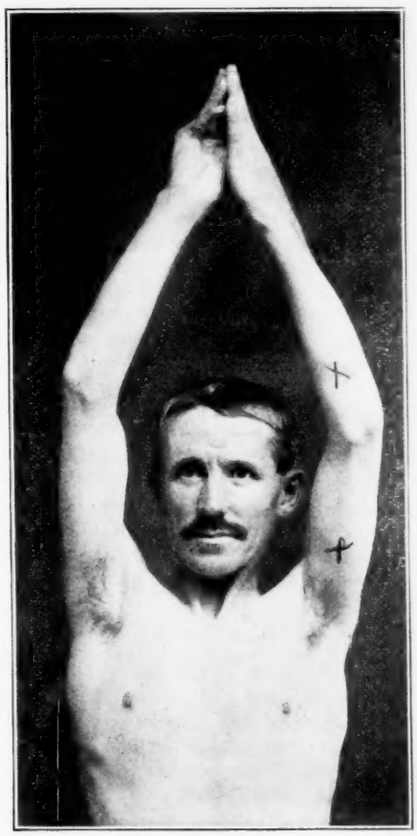


Fig. 1.—Front view of Patient 1. Deformity from scar in right hand.

Operation.—Performed Jan. 30, 1909, at the University Hospital in the service of Prof. J. William White, to whom I am indebted for the privilege of operating on the patient and reporting the case. The incision was made in the axilla along the coracobrachialis muscle and extended upward to the side of the chest and was about 5 inches long. The coracobrachialis, biceps and pectoralis major muscles were strongly retracted outward and the axillary vessels and nerves, including the musculocutaneous nerve, were retracted inward. The anterior circumflex vessels were divided between ligatures and the latissimus dorsi exposed in the floor of the wound. The circumflex nerve and posterior circumflex vessels were located as they passed backward between these two muscles. About half of the width of the subscapularis muscle was then divided on a grooved director, and cut ends turned aside, exposing the capsule. The capsule seemed to be of about the normal thickness and showed no evidence of the original tear. It was opened by an incision about an inch and a half long, in the line of the anterior glenoid margin and about half an inch below it. Exploration of the joint at first detected no abnormal condition, but when the humeral head was forced strongly outward and the finger could palpate the posterior surface of the head, it was found to be superficially flattened on its cartilaginous surface just above the greater tuberosity. The flattened area was approximately circular and about an inch or an inch and a half in diameter. This probably had something to do with the frequency and ease with which the recurrences took place. There was also a slight roughening of the anterior glenoid margin. The joint surfaces were placed in their normal relations and the capsule shortened with No. 3 chromicized catgut sutures, the upper edge of the capsule being drawn down over the lower edge. The cut subscapularis was then repaired by catgut sutures, a small drain introduced to the lower edge of this muscle, and the skin wound closed by silkworm-gut sutures. A dressing

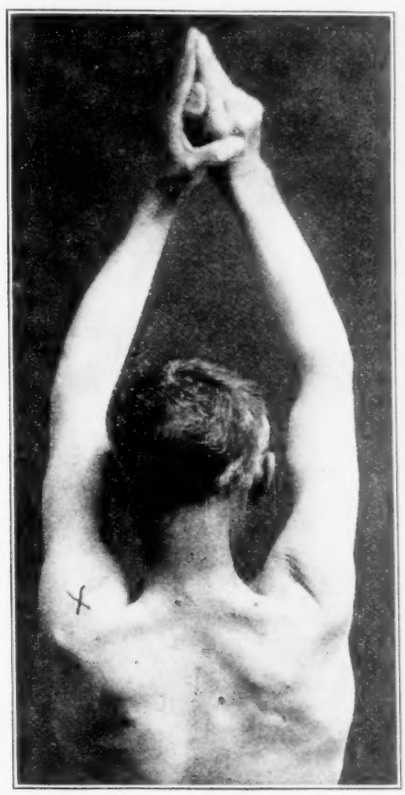


Fig. 2.—Back view of Patient 1. Movement of scapulæ same on both sides. Depression in front of acromion in right shoulder due to better muscular development on that side.

was applied, the arm bound to the side of the body, and the wrist supported in a sling.

Postoperative History.—The drainage-tube was removed on the following day. Healing occurred by first intention. The patient was discharged from the hospital on the eighth day, and on the ninth day the bandages were removed and the arm placed in the sleeve of the coat, the hand being supported in front between the buttons of the coat. There was a slight degree of voluntary motion in all directions at this time. The patient left the city on the twelfth day. The arm was bound to the side of the body during sleep for another week. Three weeks after operation forcible movements were begun and in about ten weeks the patient could raise his arm straight above his head. About thirteen weeks after operation the patient met with an accident, falling headlong from a balcony fourteen feet high, to which there was a railing three feet high, striking, he says, on his hands, head and shoulders. His hands were severely bruised and abraded, and he had a large wound of the scalp, which extended from the eyebrow across the vault of the skull to the occiput. A fracture of the skull

was diagnosed. He remained in bed nine weeks, and for months afterward suffered from mental disturbances. He has not been able to go to work up to the present time. He did not, however, sustain a dislocation of the shoulder in this accident or at any other time since the operation. He says that the affected arm is the better of the two, now. He has, however, in the hand of the opposite side, a deformity from a large and rigid scar due to an old wound (Figs. 1 and 2).

Fig. 3.—Patient 2 sixteen weeks after operation. Weight of whole body hanging from hands. Left foot does not touch the floor. Movement forward of left scapula shows that abduction is still resisted by the contracted capsule.

The ability of the repaired shoulder to withstand dislocation from such a force goes far toward proving that, after a proper shortening of the relaxed capsule, the injured joint becomes practically as strong as the normal one; and the fact that the patient considers the shoulder operated on the better of the two would seem to show that the function of the shoulder is normal or nearly so. I saw him Oct. 27, 1909, and could find no impairment of motion on examination.

CASE 2.—*History.*—The patient, a man aged 26, hospital orderly, received his first dislocation in a baseball game, in May, 1904. While sliding to a base with his left arm in extreme abduction before him, the baseman stepped on this shoulder, producing an anterior dislocation. It was reduced soon afterward and the arm bound to the side of the body by a bandage for at least a month. From that time the bandages were removed about twice a week for massage, but replaced each time and the arm kept immovable at the side of the body for about three and one-half months altogether. He did no work for about a year, after which he drove a wagon for about five months. He then dislocated the shoulder while lifting himself up to the wagon with the hand of the affected side raised above his head. This was about a year and a half after the first dislocation. A month or two later he had a recurrence while asleep in bed, and a fourth dislocation a few months later. The pain was severe in every dislocation, but always disappeared in a few days, when the patient could use his arm freely again. On July 2, 1906, the shoulder was operated on for the purpose of shortening the capsule. The scar of this incision extends from about the middle of the clavicle downward along the anterior border of the deltoid. Healing by first intention occurred. According to the patient, whose memory was shown to be very defective on some points, the arm was bound to the side of the body for only three or four days after the operation, and only a bandage to keep the dressing in place applied. He remained in the hospital about six weeks and did not work again for two years. He became a hospital orderly June 18, 1908. A short time before Thanksgiving day of the same year, while going upstairs, he slipped and when falling grasped the banister with the left hand and sustained a recurrence of the dislocation. After reduction he kept the arm bound to the side of the body for two weeks, when he returned to his duties as hospital orderly. On Jan. 7, 1909, he sustained another dislocation while asleep in bed, and the arm was kept bound to the side of the body for three weeks after reduction. On March 26, 1909, he underwent a second operation for the shortening of the capsule, the incision being made in the axilla. Healing occurred by first intention. The arm was bound to the side of the body for nine days. About six weeks after operation while raising the arm above his head to remove a blanket from a high shelf, the dislocation recurred.

Operation.—On June 16, 1909, I performed the third operation at the Philadelphia Hospital, in the service of Dr. A. C. Wood, to whom I am indebted for the privilege of operating on the patient and reporting the case. Under ether anesthesia the dislocation was first produced to demonstrate that the causal condition still existed. The arm was placed at right angles to the body, and the scar of the last operation excised. The coracobrachialis and short head of the biceps were exposed up to the coracoid process. The cicatricial tissue from the last operation made dissection somewhat tedious. The inner edge of the coracobrachialis was used as a guide in deepening the wound. The tendinous insertion of the latissimus dorsi was next sought as a guide. The circumflex nerve and posterior circumflex vessels, which pass backward around the neck of the humerus at the upper end of this tendon, usually easily exposed, were not looked for as they were embedded in cicatricial tissue. The subscapularis muscle, which, in my previous operations was easily exposed and recognized, in this case was found only after some search. Evidently the divided ends had not united closely after the last operation, or had separated later. The inner was found easily and was of fair thickness. The outer or humeral end, found after some dissection, was fibrous and scanty. The anterior and lower part of the capsule was now exposed from the humeral to the glenoid attachments. This portion of the capsule was distinctly relaxed and the dislocation could be easily produced and reduced. An opening, about 2 inches long, was made in the capsule by the knife, about half an inch below and parallel to the glenoid margin. The capsule seemed to be of substantial thickness throughout. Two mattress sutures of chromicized catgut, No. 3, were then introduced with some difficulty and when they were tied the lower edge of the capsule was drawn tightly upward underneath the upper flap. The lower edge of the upper flap was then drawn

down over the lower by two single sutures. The ends of the divided but rather scanty subscapularis were then sutured together with catgut. A small rubber drainage-tube was introduced to the lower edge of this muscle and the superficial wound closed with silkworm-gut. A dressing was then applied and the arm bound to the side of the body by a Velpeau bandage.

Postoperative History.—On the day following operation the patient developed an epididymitis, which, he says, came on after the last operation, but a few days later than after this operation. It subsided in a few days in both instances. It was soon evident that there was some infection in the wound. The temperature reached 102 4/5 on the third day, and subsided to normal on the fourteenth day. On the nineteenth day a catgut suture escaped in the dressing, after which the discharge rapidly ceased. The suture was in the form of a loop about a quarter of an inch in diameter and the knot was intact. From the size of the loop, and the size and color of the catgut, it was evidently one of the sutures placed in the capsule or in the subscapularis muscle. It was probably a capsule suture, and, because of my anxiety to sufficiently shorten the capsule, had included too much tissue and had been tied under too much tension. Five weeks after operation the patient returned to his work as a hospital orderly. The arm could then be brought from the side of the body to an angle of about 45 degrees. There was about the same range of movement backward and forward and some rotation. From this time on the patient was advised to use as much force as he could stand in dragging the arm in the direction of abduction, as in hanging by both hands from a horizontal bar or from an upright pole. He did not have the assistance of a skilled masseur, as did my other two patients. The increase in function in the shoulder has been slow but steady, and very encouraging to the patient. I do not doubt that the cicatricial tissue at the site of the repair of the capsule will continue to yield until the capsule is of the normal length and the motion of the joint is normal. On October 8 the patient was able by hanging from his hands, to attain the degree of abduction illustrated in Figure 3.

I had little or no fear for the integrity of the joint from the infection which developed in this case. It was probably more a strangulation necrosis from one of the sutures in the capsule or subscapulous muscle than a serious infection, and with dependent drainage was well under control from the beginning. There was no danger from retention in the joint, since the operative wound extended directly downward from the joint, so that any discharge had a free and easy outlet. In those cases, as in Wiesinger's and in Hildebrand's two cases, in which the wound was left open and tamponed up to the opening in the joint which was not closed, the final results were good. Hildebrand, in addition, deepened the glenoid cavity with a sharp curette and flattened off the outer margins with a chisel. Mikulicz overlapped the capsule with silver sutures and packed the wound, which closed in three weeks. With the exception of my cases, in all those which have been reported the incisions have been made in the upper part of the shoulder, and were frequently drained, so that there must have been more or less retention of discharge in the wound and exposure of the joint to the risk of infection. The good results which were reported in all cases would indicate that the risks of infection of the shoulder-joint are overestimated.

CASE 3.—*History.*—This patient was referred to me by Dr. E. Eliason. He was a young man, aged 21, and had sustained a dislocation of the left shoulder about five years ago, from a fall in an epileptic attack. After this dislocation the arm was bound to the body for two weeks. He has had twelve dislocations altogether, most of them in epileptic attacks, but some from such causes as throwing up the arm to scare away a cat, falling out of a chair, and being pulled on the arm by another person. Dislocations had occurred during convulsions in bed. The patient suffered considerable pain for some days after each dislocation, and usually found it necessary to take a general anesthetic for the reduction. The fear of a recurrence of the dislocation would not permit him to engage in sports and games of which he is fond. He could raise the arm above his head, but he did it with caution. The last dislocation occurred about the middle of September and since then he had been binding his arm to the side of the body at night to prevent the recurrences.

Operation.—This was performed at the University Hospital, Oct. 16, 1909, with the assistance of Dr. Eliason. The incision was made along the coracobrachialis muscle and was carried

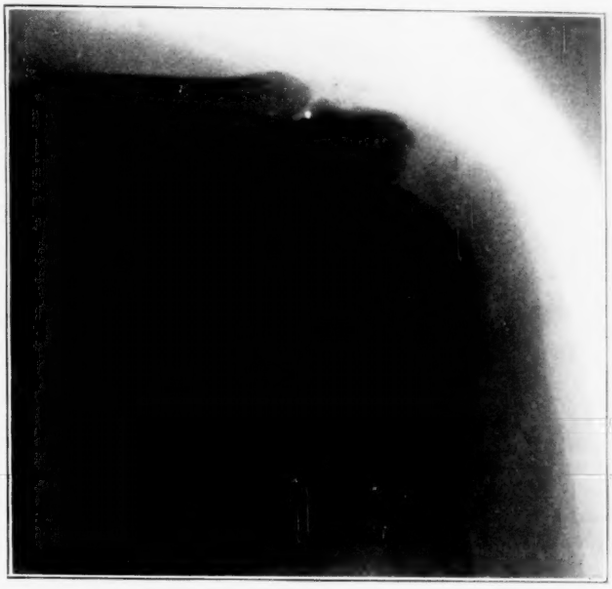


Fig. 4.—Patient 3; right shoulder normal. Compare roundness of normal humeral head with notch in Figure 5.

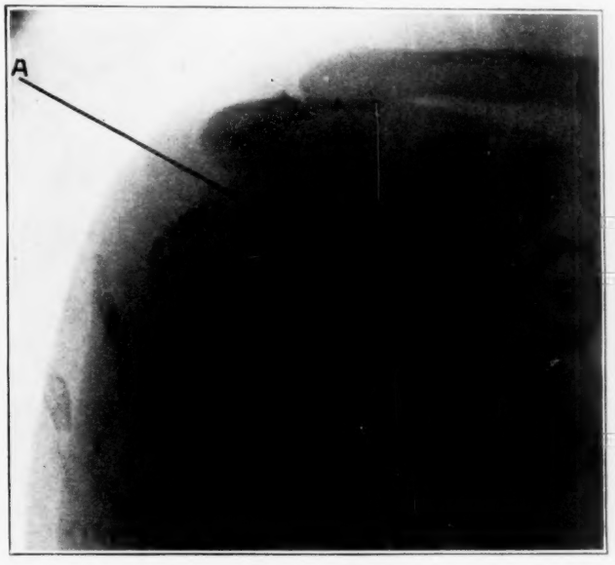


Fig. 5.—Patient 3; left shoulder recurrently dislocated; *a*, defect in cartilaginous surface of humeral head, frequently found in recurrent dislocations of shoulder, sometimes involves a third of head, and in dislocated position rests on anterior margin of glenoid cavity.

into the vault of the axilla under the pectoralis major and slightly downwards along the side of the chest. It was about 5 inches long. The operation was essentially the same as in the other cases, and as in them strong retraction was necessary on the outer side of the wound throughout the operation. On the inner side much less force was necessary. The musculocutaneous nerve entered the coracobrachialis muscle a little higher than in the previous cases and did not retract as

readily. The greater part of the subscapularis muscle was divided. The capsule in the upper part of the exposed portion was so thin that the cartilage of the humeral head could be seen through it. It was most relaxed in its lower portion. The defect in the cartilaginous surface of the head (Figs. 4 and 5) could not be palpated as the finger could not be made to pass to that portion, the head being held close to the glenoid process of the scapula by the surrounding muscles. A small foreign body which had evidently escaped from the joint was found in the wound. It was probably derived from

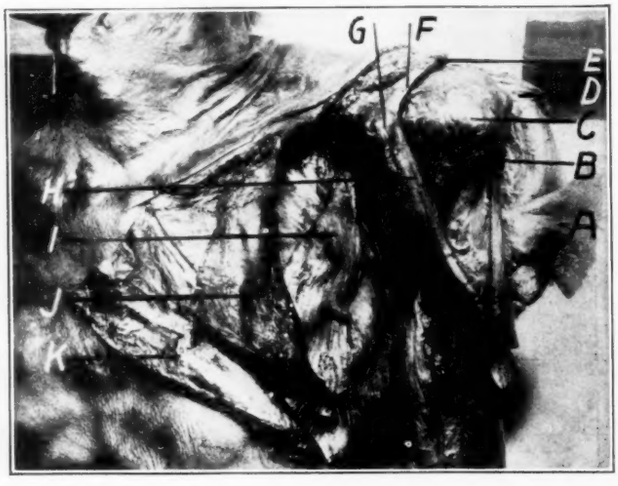


Fig. 6.—Dissected specimen, left shoulder; arm in extreme external rotation; *a*, reflected humeral end of pectoralis major; *b*, long head of biceps; *c*, lesser tuberosity of humerus; *d*, reflected deltoid; *e*, acromion; *f*, coraco-acromial ligament; *g*, coracoid process; *h*, short head of biceps and coracobrachialis muscles; *i*, pectoralis minor; *j*, reflected clavicular and sternal portions of pectoralis major; *k*, reflected skin and fascia.

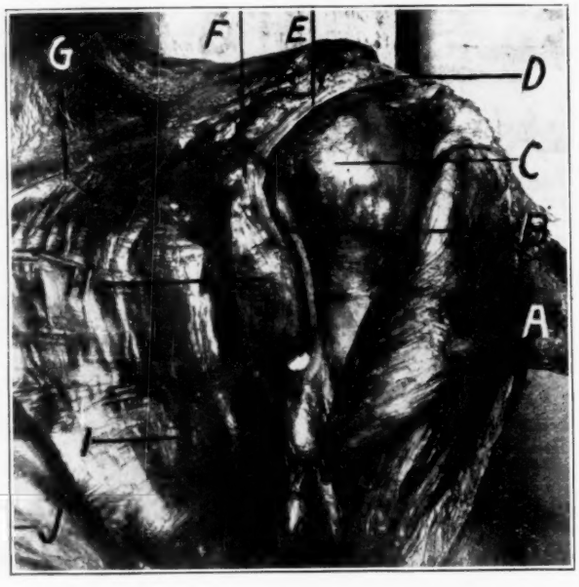


Fig. 7.—Same specimen as in Figure 6: extreme internal rotation; *a*, reflected deltoid; *b*, long head of biceps; *c*, greater tuberosity; *d*, tip of acromion process; *e*, coraco-acromial ligament; *f*, coracoid process; *g*, clavicle; *h*, short head of biceps and coracobrachialis muscles; *i*, clavicular and sternal portions of divided pectoralis major; *j*, reflected fascia and skin. The lesser tuberosity of the humerus, which is internal to the long head of biceps (compare with Figure 6) is concealed under the coracoid process and coracoacromial ligament.

that portion of the humeral head showing the defect. The capsule could not be overlapped, but the edge of the lower thicker portion was brought up underneath the upper thinner portion by two No. 3 chromicized catgut sutures, and the capsule thus shortened. The margins of the divided subscapularis were reunited by a continuous catgut suture, a small drainage-tube introduced to the lower margin of this muscle, and the skin margins united by silkworm-gut sutures. A gauze dressing was applied and the arm bandaged in the Velpeau position.

Postoperative History.—The drainage-tube was removed on the second day. The patient complained of much pain in the shoulder and down to the wrist on the first two days. On the third day it had largely subsided, and on the fourth day had practically disappeared. Healing occurred by first intention. The skin ruptures were removed on the fifth day and the patient left the hospital on the seventh day. The arm will be bound to the body until the end of the second week. Eleven days after operation, he has abduction to about 60 degrees, rotation is almost complete, and he has all the movements of the forearm, although, of course, they are weak. (This patient had full motion in six weeks, and since then an epileptic attack, but has had no dislocation since the operation.)

The first patient on whom I operated and whose case I reported in my first paper has been at work continuously since the first report, has been active in gymnasium and other athletic work, and has engaged in several

Fig. 8.—Same specimen as in Figures 6 and 7: arm in extreme abduction; *a*, coracoid process; *b*, lower portion of greater tuberosity; upper portion is under acromion; *c*, short head of biceps and coracobrachialis; *d*, long head of biceps; *e*, humeral end of divided pectoralis major; *f*, acromion process; *g*, coraco-acromial ligament; *h*, reflected deltoid. Between the outer surface of the surgical neck of the humerus and the edge of the acromion can be seen a portion of the space still intervening between the two.

semipublic boxing contests. He has had no recurrence of the dislocation, and feels that the shoulder operated on is as strong and the motion as good as ever.

While the four cases in which I have performed the capsule operation represent a small experience, there is only one other operator who has had as many.* Perthes contracted the capsule in four cases, while Francke did it in three, and excised the head of the humerus in one, an operation which has been practically abandoned. I am very much interested in the variation in progress of

* Since the reading of this paper I have operated in four new cases, in the service of Prof. J. William White, at the University Hospital. In three there was healing by first intention, and in one slight infection. In one case there was practically full motion in four weeks, at the end of which time the patient began to take up swimming exercises. In the second case, in which operation was done five weeks ago, motion is almost normal. The third patient, operated on two weeks ago, had abduction to a right angle, while the fourth was operated on only a week ago and has not begun to use the arm. The patient operated on five weeks ago has had several epileptic attacks since obtaining free use of his arm.

function in my first three cases. It required six weeks to get the arms straight above the head in the first case, about eight or nine weeks in the second, and about fifteen weeks in the third. The problem is clearly one of technic. In the first case the margins of the original tear in the capsule were found and sutured edge to edge, some shortening resulting from the old shriveling of the upper portion and the effect of the sutures. The slight stretching necessary later was more easily accomplished than in the second case, in which the edges of the opening in the capsule were overlapped and the shortening probably slightly greater. The inflammation which followed in the third case, and the anxiety to shorten the capsule and thus to prevent the recurrences which followed the two previous operations, delayed the period at which forcible movements of the joint could be begun and rendered them less effective. Infection should not occur more frequently in this than in any other clean operation.

Goldthwait in a recent paper[4] explained the recurrent dislocations of the shoulder by certain peculiarities in the bony anatomy of the shoulder. He says that normally the lesser tuberosity of the humerus, when the arm hangs at the side of the body, is opposite or rests against the coracoid process. This process may be especially long, so that the forward movement of the arm is limited by impingement of the lesser tuberosity against it. If the force is sufficient, the head of the humerus may be lifted out of the glenoid cavity, the coracoid acting as a fulcrum. In like manner the acromion may be longer than normal, so that when the arm is raised above the head in extreme abduction, the greater tuberosity of the humerus impinges against the edge of the acromion process, and, if the force is strong enough, the head of the humerus is again forced out of the glenoid cavity, a true dislocation taking place. Drooped or stooped shoulder accentuates these peculiarities.

If these anatomic peculiarities are marked, Goldthwait says, it is easy to understand the ease with which a dislocation takes place, even if no great violence has been a factor in its production. He does not cite a case in which the recurrent dislocations developed without the occurrence of a first traumatic dislocation. The inference is that from the influence of stooped shoulder and long coracoid or acromion processes, the impingement of the tuberosities of the humerus leads to a gradual relaxation of the capsule and the development of recurrent dislocations.

Of the 47 cases which I collected from the literature and reported in my first paper, in all of those in which the history covered this point, the recurrences were preceded by a first dislocation due to the application of considerable violence. In connection with none could it be inferred that the patient had suffered previously from any inconvenience in the affected shoulder, from which one might be justified in suspecting that there had been a preliminary relaxation of the capsule.

Goldthwait does not describe the experiments he performed on the cadaver, nor the method by which he reached his conclusions. One is led to infer that he took only the bones into consideration. I tried to confirm the work of Goldthwait on the cadaver, but employed a dissected specimen in which the bones, muscles and ligaments were left as far as possible in their normal relations. The deltoid was detached from the clavicle and acromion process and reflected backward so as to expose the structures it was necessary to observe.

With the arm at the side of the body in the position of rest, the inner edge of the lesser tuberosity does not rest against the tip of the coracoid process, but is removed about three-fourths of an inch from it. In extreme external rotation it is about an inch and a half away (Fig. 6), and on extreme internal rotation the lesser tuberosity rolls easily under the tip of the coracoid. This is well illustrated in Figure 7. The lesser tuberosity is internal to the long head of the biceps which lies in the bicipital groove between the lesser and greater tuberosities. The greater, on the outer side of the long head of the biceps, can be seen in the illustration, but the lesser tuberosity on its inner side cannot be seen because it is concealed under the coracoid process. By dragging the shoulder forward and downward an effort was made to simulate the position of stooped or drooped shoulder, which Goldthwait says favors the earlier impingement of the lesser tuberosity against the coracoid. In this position the relations between the two bones were not altered, the scapula and humerus moving together and maintaining the same relations to each other as in the erect position. The anterior surface of the coracoid process is covered over by the attachment of the coraco-acromial ligament up to the tip of the process, which is still further covered by the common tendon of the short head of the biceps and the coracobrachialis muscle, so that the lesser tuberosity could not come into direct contact with it. But the lesser tuberosity is also covered over by the subscapularis tendon, so that it presents no projecting edge which could impinge against the tip of the coracoid if that were not already masked by the ligament and muscles. Figures 6, 7 and 8 illustrate these points very well. The whole anatomic arrangement here is one calculated to compel the head of the humerus on internal rotation to glide under the coracoid process and to render impossible the impingement of one against the other.

Again, when the arm is raised above the head in extreme abduction, the greater tuberosity cannot be made to impinge against the edge of the acromion, but glides under it. Moreover, when the tuberosity passes under the acromion, and an attempt is made by extreme abduction to bring the outer surface of the humerus against the edge of the acromion, this is prevented by the resistance of the capsule and muscles below. Although the two bones come close together they do not strike. As the force is increased the scapula is rotated in such a manner that its lower angle moves outward and upward and its upper end, including the acromion process, moves inward and upward away from the approaching humerus. It seemed evident that before the two bony surfaces could be made to strike each other the tense lower part of the capsule must rupture. This would tend to confirm the conclusion which I had reached in my first work on this subject, that the essential lesion in a dislocation of the shoulder is a rupture of the capsule. These observations were confirmed on three other dissected bodies. The results also tend to show that frequent strains on the capsule from the impingement of these bony surfaces against each other do not occur, and that a preliminary relaxation from such a cause is impossible. As the result of my observations on the cadaver I believe that the mechanism of recurrent dislocations of the shoulder suggested by Goldthwait cannot be effective. I wish to acknowledge here, my indebtedness to Dr. G. G. Davis, associate professor of applied anatomy in the University of Pennsylvania, for the anatomic material employed and the freedom of his department.

4. Goldthwait: Am. Jour. Orthop. Surg., 1909, vi, 579.

About simultaneously with Goldthwait's paper appeared one by Clairmont and Ehrlich,[5] in which is offered a new operation for the cure of this condition. According to these writers, mechanical therapy has been a failure and operation very successful. They recognize the fact that, in all operations, the relaxed capsule was contracted; and after a critical examination of all the methods employed up to the present time, they conclude that this shortening of the capsule was the only cause of success. They object to these operations, however, because of the large wound necessary and the exposure of the joint. They believe that the real cause of the recurrences is a lack of coordination of antagonistic muscles, particularly because the dislocations result from simple muscular contraction and not from severe trauma. Since, in the intervals between the recurrences, the joint functionates normally, they feel justified in leaving out of account the pathologic lesions present and in combating only the causal force, the abnormal muscular contraction on the axillary side of the joint. They conceived and put into effect by operation, in two cases, the idea of furnishing a resistance to this abnormal force, by transplanting a muscular flap taken from the posterior portion of the deltoid. This flap was made to encircle the posterior and outer surface of the surgical neck of the humerus as a sling and was attached to the under surface of the anterior portion of the deltoid. This antagonist is relaxed when the humerus is at rest and does not hinder its movement. On elevation of the arm it contracts simultaneously with the rest of the deltoid and, by pulling the proximal end of the humerus outward and upward, hinders the occurrence of the dislocation. Three months after operation in one case and two months in the other no recurrence of the dislocation had taken place and there were free movements in the shoulder-joint.

The chief advantage claimed for this operation is that it is a simple one. Compared to some of the operations which have been done, particularly those by Perthes, it may be. It requires two incisions, the anterior 8 cm. long, going through the upper portion of the deltoid, the posterior extending from the spine of the scapula downward to the insertion of the deltoid in the middle of the humerus. Half of the pectoralis major tendon is divided, but is later repaired by sutures. The teres major and latissimus dorsi tendons are divided to the same extent and are not repaired later. The two heads of the biceps are separated to make a part of the passageway for the transplanted flap. The external head of the triceps is divided obliquely for 1 to 2 cm. and is not repaired. The finding and dividing of the teres major is said to be difficult and to expose the circumflex nerve to considerable risk of division, while the conducting of the muscular flap through the passageway made for it gave some trouble. In the second case it would not reach as far as desired because of its contraction. The fact that the two patients operated on had free movements in the joint and that the condition had not recurred three and two months after operation, respectively, is not reassuring. After the operation of contracting the capsule, the patients have been able to take up gymnastic exercises, such as swinging from horizontal bars, climbing, swinging a heavy hammer, etc. It is doubtful if the small transplanted flap would long resist such forces, in view of the presence of the relaxed capsule, the contraction of which, it is admitted, produced the cure in all the other reported cases.

5. Clairmont and Ehrlich: Arch. f. klin. Chir., 1909, lxxxix, 798.

Clairmont and Ehrlich maintain that the contraction of the capsule is not a physiologic operation, since in the normal joint the capsule is so lax that it offers no hindrance to the free movements of the humeral head; so that it would be difficult at the time of operation to determine how much of the relaxation was normal and how much pathologic. While the normal capsule offers no hindrance to the free normal movements, it offers a very decided resistance to movement beyond the normal in every direction. When the arm is hanging down at the side of the body, the upper part of the capsule is tense, because that is the limit of movement in that direction. When the arm is elevated to its limit the lower part of the capsule is tense. In a similar manner the posterior capsule is tense on extreme anterior movement and the anterior portion on extreme posterior movement. When any part of the capsule is thus put under tension it becomes a very positive factor in holding the bony articulating surfaces snugly together. The corresponding muscles also take part in resisting the extremes of movement, but their resistance is probably not so rigid as that of the capsule. All parts of the capsule can be equally lax only in the midposition, i. e., with the arm directed outward at right angles with the body, without rotation. Since the normal capsule is tense below and anteriorly in extreme abduction of the arm, if during the operation the relaxed capsule could be made tense by the suture with the arm in this position, it would then be of the normal length. But it is difficult to retract the edges of the wound in that position.

In my last case I made the capsule tense by sutures with the arm at about a right angle with the body, and at the present time, eleven days after operation, the patient can abduct the arm to about an angle of 60 degrees. The ease with which he can do this promises a more rapid return of full motion than in any of the other cases. In order to guard against the recurrences of the dislocation which is the chief object of the operation, the capsule should always be made shorter than normal, and should be stretched to the normal by forced exercises later. Only repeated movements beyond the normal will overstretch the capsule. Sudden and severe violence would not stretch but tear the capsule, when a new dislocation would probably take place.

In the treatment of recurrent dislocations, in my opinion, a sufficient shortening of the relaxed portion of the capsule will result in a cure every time. It is not held that this cannot occur without operation. I have already reported a case in which the dislocations ceased to occur twenty years ago, while the first was received in a fall forty years ago. A similar case has been seen since and another heard of. In the two which have been seen and examined there is still in each a sense of weakness when the arm is in abduction, which movement is made with caution. There is in both cases a distinct inclination to avoid this movement and especially to avoid any severe muscular exertion while the arm is in this position, indicating an uncomfortable sense of insecurity and the possibility of recurrence. In the first of these two cases, the recurrences took place at intervals of about two years, and in the second, in which both shoulders were involved, when the dislocations took place they gave little trouble and the bones usually slipped back into place almost immediately, indicating in this case probably a smaller rent in the capsule than usual and, therefore, less than the usual relaxation. It

is easily conceivable that during long intervals between the recurrences with the arm at the side of the body and the elongated portion of the capsule in the position of most complete relaxation, just enough contraction of the cicatricial tissue about the torn capsule occurred to prevent a dislocation when the arm is raised in abduction and no violence is applied to the arm. This explanation of these rare spontaneous cures is the more plausible when we take into consideration the fact that the elongation of the capsule at the site of the original tear is probably never more than an inch. In a few of the reported cases we are informed how large a piece of the capsule was removed for the purpose of shortening it. In only one case (Stimson) was it as wide as an inch, and in others it was about 1 cm., half an inch, three-quarters of an inch, etc. This agrees with my experience in my last three cases, while in the first no observations were made on this point.

The chief difficulty with the spontaneous cures and with the non-operative methods of treatment is that they succeed too rarely and the cures are too uncertain. Goldthwait has seen a number of these recurrent dislocations, but reports only one cure by his method of treatment. Of this one he says:

> In one very obstinate case which the writer has seen, in which nothing short of an extensive operation seemed to promise relief, the effect of position was tried (erect position of shoulders) and with six months of use of a brace to maintain this position no further trouble has occurred in two years of free use of the arm, while previous to the change in the position of the shoulders the dislocation frequently followed very slight movements, such as raising of the arm or the putting on of the coat.

I have found nothing in the literature to show that shoulders cured would withstand severe tests. In three months after operation or less I have given my patients full permission to undertake climbing or any gymnastic exercises, swimming, etc., and to forget so far as the still atrophied muscles will permit, that they ever had had dislocations. The overlapped capsule at the site of the original tear is in all probability, at the end of three months, as strong as the original capsule and is backed up by the cicatricial tissue around it. The headlong fall of seventeen feet which my second patient sustained without a recurrence of the dislocation goes far toward proving this statement. I feel that one is justified in promising a positive cure by operation, which cannot be sincerely said of any non-operative method of treatment.

There is a feature that deserves mention connected with those cases in which the intervals between the recurrences are long and the patient is hopeful that each one will be the last. Almost all these patients are seized with a feeling of panic when they realize that the arm is passing to the abducted position. The result is that they soon learn that their only safety is in keeping the arm at the side of the body, which makes cripples of them.

My second patient, because of this fear, had given up all work, although he was a poor man, a coalminer. Another patient, who refused operation, has been having recurrences about every two or three years, and is now hopeful that he will have no more. Yet the dread of abduction of the arm was so great that he turned his face away when the first patient on whom I operated attempted to demonstrate his freedom of movement and confidence in the shoulder operated on. This man is healthy and aged about 35, and without operation will be thus crippled throughout the rest of his life. One is surely justified in advising operation under these circumstances. There have been no deaths or ankyloses of the shoulder reported and there should be none.

The operation is done in a clean field, with a simple straight incision, 4 to 6 inches long, and involves merely the placing of a few sutures in the exposed capsule for the contraction of the relaxed portion. The best possible drainage of the field of operation is afforded. The shortened capsule will later elongate to the normal from traction by forced abduction and full function will return. There is much less danger associated with this operation than with the wiring of a fractured patella, since in the latter operation the tissues are severely traumatized, and if infection occurs the joint is in greater danger because of its large extent, its numerous pouches and the absence of good drainage. Moreover, without operation, there is practically no hope of obtaining a normal shoulder, when recurrences have once become established. There should also be less danger than in an appendicitis operation or the radical cure of an inguinal hernia, because of the larger serous cavity exposed to infection and the greater possibilities of a hernia following the latter operations.

CONCLUSIONS

The pathology of recurrent dislocations of the shoulder is essentially the same as that of the original traumatic dislocation. The margins of the tear in the capsule which permitted the first dislocation were prevented from uniting firmly and closely and were again separated by each recurring luxation, so that finally they united by a cicatricial portion of capsule bridging the gap between the margins. The resistance to dislocation offered by the normal capsule is lacking just as much in every recurrence as immediately after the first dislocation.

The first of the two cases here reported tends to prove that the capsule after operation may be practically as strong as before the first dislocation. The second case shows that failure of the operation to cure should not be charged to the operation itself, but to a defect in the method.

Peculiarities in the bony anatomy of the shoulder, as suggested by Goldthwait, do not explain the recurrences, and more certainly do not account for the original dislocation. The operation proposed by Clairmont and Ehrlich is much more severe than a capsulorrhaphy need be, does not remove the cause, and gives a joint much less secure with more impairment of function than follows a capsulorrhaphy.

Cessation of the recurrences may follow non-operative methods of treatment or may occur spontaneously; but such cases are rare, uncertain in their occurrence, and leave shoulders which are functionally very unreliable. After capsulorrhaphy by overlapping the edges of the opening in the capsule, the joint becomes practically normal.

In my judgment, this operation should be regarded as less dangerous to life and to the part operated on and more successful in avoiding or preventing later troublesome sequelæ, than the operations for appendicitis and inguinal hernia, and should be regarded as much safer than the operation for the wiring of a fractured patella.

2005 Chestnut Street.

THE OFFICE OF CORONER

ITS PAST, ITS PRESENT, AND THE ADVISABILITY OF ITS ABOLISHMENT IN THE COMMONWEALTH OF MISSOURI *

R. B. H. GRADWOHL, M.D.
Sometime Coroner's Physician for the City of St. Louis
ST. LOUIS

The actual date of the origin of the office of coroner is lost in the mists of antiquity. Some authorities state that it existed at the time of King Alfred (871-910). At all events the office, so named from *corona*, because the coroner is an officer of the crown who kept some of the pleas of the crown, was founded in England and still exists in all parts of the British Empire as well as in the United States. In Scotland the corresponding duties are carried out by the procurator fiscal. The primary object of the coroner's office in England appears to have been to keep watch over the profits of the crown, to inquire concerning treasure trove, wreck, whale and sturgeon and to secure them for the king's use. His later function, namely, to conduct an inquest in cases of sudden death, had a similar purpose—to see that the crown was not deprived of its emoluments arising from the forfeiture of the chattels of felons and outlaws. Originally, it was the concern of the coroner to bring the goods of the felon to the king for his use rather than to bring the felon himself to justice.

Anciently, it was also the duty of the coroner to take the confession and abjuration of felons. He also held inquests on prison-breach, arson and housebreaking.

While the office was practically created for but one definite purpose, namely, the safeguarding of the property of the crown, through the march of ages this purpose has been slowly minimized, and we now see another function almost completely usurping it, i. e., the investigation and determination of the cause of death of individuals dying by their own hand, by some one else's hand, by official execution or through the multitudinous channels designated "accidents."

Such were the duties of the coroner in England in bygone days. They are now limited in that country, in accordance with the coroner's act (1887, S. 3), to an inquiry on "the dead body of a person lying within his jurisdiction" as to how, when, where and by what means the deceased came by his or her death, in cases in which "there is reasonable cause to suspect that such persons have died a violent or an unnatural death, or died a sudden death of which the cause is unknown, or that such person has died in prison, or in such place under such circumstances as to require an inquest in pursuance of any capital act, and on treasure trove."

THE OFFICE IN ENGLAND AT THE PRESENT TIME

In England at the present time there are three kinds of coroner. First are the coroners *virtute officii:* (a) the Lord Chief Justice of the King's bench who, by virtue of his office, is the chief or supreme coroner of England; (b) the Puisne Judges of the King's bench, who are sovereign coroners. Second are coroners by *virtute cartæ sive commissionis.* These are coroners appointed by the king, coroners of the verge, and the precincts of the palace, and are those who exercise their jurisdiction within the precincts of the king's palace.

The admiralty has power to appoint coroners within its jurisdiction, usually the judge marshal of the admiralty and, *pro hac vice,* his deputy. This jurisdiction was anciently confined to matters arising on a high sea. The jurisdiction of admiralty extends to matters now arising on the open sea between the high- and low-water mark when the tide is in, but when the tide is out the authority of the county coroner obtains in such places. The coroners *virtute electionis* are the (a) county coroner and (b) borough coroners. In other words, in England there are four classes of coroners—official coroners (Lord Chief Justice of England and the judges of the High Court of Justice being *ex officio* sovereign coroners), franchise coroners, borough coroners and county coroners. In America, statutory provisions generally provide that the coroner shall be elected by the voters of the county, though in some states they are appointed for counties.

It can thus be seen that the office of coroner, ancient and honorable though it may be, now seems cumbersome and obsolete, viewed in the light of the modern specialization and systematization of human endeavor. Here we have the spectacle of an officer exercising two functions of widely separate character, judicial and ministerial. The *British Medical Journal*[16] recently commented on the curious extent of the jurisdiction of the ancient office of coroner afforded by an inquiry held in August, 1909, at Yeovil. The proceedings, which took place under an act of Henry III, were to determine what a certain gold ornament found was and by whom it was found; the jury solemnly decided that the article was an ancient British torque, that it was found by Henry Coles, and that the owner was unknown. To whom the torque belongs will have to be determined by the higher court. This shows that even at this time coroners are still exercising in England some of their ancient prerogatives.

CORONER'S OFFICE IN AMERICA

The coroner's office was brought to America by the colonizers of New England. It existed throughout colonial times and after the revolution of 1776 and the formation of the constitution of the various states, it was incorporated into laws, or else was spoken of explicitly in the constitution from the various states. Dr. Cattell, in a paper read before the Philadelphia Medical Jurisprudence Society, Oct. 19, 1908, entitled "The Coroner's Office at Philadelphia: Its Past and Future," stated that the coroner's office coexisted with the arrival of Penn on the banks of the Delaware. An early case recorded is that of Benjamin Acrod, in 1683, on whose body a coroner's inquest was held. The jury found that "he killed himself by drinks." Suicides at that time who were possessed of goods might have these, in part or whole, claimed by the governor. In this case, however, Penn relinquished any claims that he might have to the goods, and an administrator of the estate was appointed.

With one or two exceptions which will be spoken of later, the coroner's office exists in all the different states of the Union. The duties of the office are mainly the investigation of the cause of sudden and violent death, yet the incumbent still performs as a ministerial officer the duties of a sheriff when that officer is incapacitated. The privileges and liabilities of a coroner as a judicial officer are determined by the status of the coroner's court; thus in England, where a coroner's court is a court of record, the privileges, immunities and liabilities are those ordinarily belonging to judges of courts of record. No action lies against him for any matter done

* Read before the St. Louis Medicolegal Society, Nov. 12, 1909.
* Because of the limitations of space, the article is here abbreviated by the abridgement of the historical portion. The complete article appears in the author's reprints.

16. Aug. 21, 1909.

by him in the exercise of his judicial functions. In the United States this court is a court of inferior jurisdiction, and not of record, and the coroner's privileges are correspondingly abridged and his liabilities are extended. In his ministerial capacity, his privileges and liabilities are those of a sheriff, whose substitute he is.

Thus we have at present an officer known as a coroner, created by statute or constitution, a quasi-magistrate, a conservator of the peace throughout his county, holding inquests in sudden deaths, issuing subpoenas, administering oaths to jurors, acting as marshal or sheriff when such officers cannot act, conducting post-mortem examinations himself or designating some other person to do so, making chemical and microscopic examinations of parts of the bodies of deceased individuals, or causing some one else equally skilled or unskilled, as the case may be, to do the same; in short, performing the duties of judge, advocate, physician, pathologist, bacteriologist, toxicologist! The system is absurd on the face of it. Since the time of Erasmus, we have had no pantologists; therefore it is easy to understand that the incumbent of this office is never qualified to perform all the duties for which he is elected by the people and charged by the constitution of the state to carry out.

Out of this weird jumble of duties, there stand out two functions which to-day represent the work which the coroner has mapped out for him on his induction into office:

First, he must make inquiries directed to show whether or not certain individuals came to their death from causes other than disease, and, if so, in what manner the violence causing the injuries resulting in death was operative.

Second, he must go through with procedures directed to the discovery, apprehension, examination and possible indictment of the person or persons by whom the violence has been committed.

It requires but a casual observation to perceive that these are two widely separated fields of activity and that they each call for a special kind of qualification: the first inquiry demands naturally a degree of medical knowledge usually possessed only by those who have been especially trained in that department of medicine called pathologic anatomy, in its broadest sense, by which I mean expertness in gross pathology, histology and bacteriology, coupled with a good general fund of medical information. The second inquiry demands a capacity to deal directly with the administration of justice with the object in view of correlating medical evidence with ordinary evidence for the purpose of fixing legal responsibility in all cases coming before the coroner's tribunal. Logically, the second inquiry demands the services of a jurist to hear the facts properly presented by a qualified member of the bar.

NEED OF SPECIALIZATION OF FUNCTIONS

While medicine and law have progressed slowly but surely far beyond the limits which existed at the time of the foundation of this office, the law, so far as it was represented in the primary creation and present existence of this office, apparently fails to recognize the need for specialization of the various functions of the office. For example, there is nothing in the statutes or constitution which demands that a county coroner should possess any kind of qualifications at all. It does not specifically state that he must be either a trained jurist or a trained pathologist, yet necessarily he cannot properly exercise the functions of his office in the absence of this double set of qualifications. In some places, mostly in the large cities, the multitude of cases which come before the coroner's court have so embarrassed him that he has in many instances delegated the medical side of his work to some physician or physicians. The legal phase of his activity is usually handled by the coroner himself or by one of his deputies. It is unnecessary for me to describe the laughable travesty on justice which is continually going on in coroner's courts because of the failure on the part of the presiding officer either to understand or to utilize the ordinary methods of court procedure.

This haphazard method has apparently gone on for years without any definite step having been taken to reform it, even though members of the bar have long since recognized the shortcomings of the system. In this day of specialization no one would dare to believe that any one individual ever possessed suitable qualifications to perform all the duties of the office of coroner. In spite of the absurdity of the situation created by human minds and hands, wherein some one is asked to do what is well-nigh impossible, but little action has been taken with a view to ameliorate the condition.

MEDICAL EXAMINER SYSTEM OF MASSACHUSETTS

If we would have it otherwise, we will not have to look far for a system which, while insuring a high standard of skill and fairness in both medical and legal investigation, is simple, practical and economical. I allude to the system known as the medical examiner system of Massachusetts.

Strange to say, this system was created in 1877 synchronously with the abolishment of the office of coroner in the commonwealth of Massachusetts, not so much because a need was felt for separating the two widely different functions of the office, but because of certain flagrant abuses which prevailed among the incumbents of the office in Boston. These abuses became so extreme that the legislature, spurred on by the arguments presented by a young Boston attorney, Mr. T. H. Tyndale, at the present time an honored member of the Suffolk bar, passed the bills which were drafted by him and which are now known as the medical examiner laws of Massachusetts. With the enactment of these laws, Massachusetts both purged herself of abuses and created a logical system of medicolegal investigation that should serve as a model for all seekers after advanced, practical and fair methods of jurisprudence. The system there (and it might be added three other states of the Union, Michigan, Rhode Island and Connecticut, have followed the example of Massachusetts and enacted similar laws) divides the work between the medical examiner and the district attorney's office, aided by special officers of the police department. The laws creating the office of medical examiner provide for the appointment by the governor, with the advice and consent of the council, for a term of seven years, of able and discreet men, learned in the science of medicine, to be medical examiners and associate medical examiners in each county. The state is divided into districts, according to population. There are fourteen counties in the state, and these are subdivided into districts, according to population, the number of districts ranging from one, in the case of Nantucket, to ten, in the case of Essex and Middlesex. An examiner and associate examiner are appointed for each of these districts, with the exception of Suffolk, a county which is not divided, where two examiners and one associate are appointed. The total number of districts is, therefore, seventy-two, with an average to the county of about five. There are seventy-three examiners and seventy-two associates. Reappointment has been com-

mon, examiners and their associates serving repeatedly for one term after another. In Suffolk County the two examiners originally appointed served with distinction for four terms, a period of twenty-eight years. This statement will serve to show that in Massachusetts, in this instance at least, merit seems to have been placed above party politics.

The duties of the medical examiner consist primarily in the investigation of the deaths which have occurred within their districts of all persons who may be supposed to have died from violence, a term which has been accepted to mean "other than from disease." Under this heading would come:

1. Deaths from violence, wherein either from the circumstances of the death, from the appearance of the body, or from the nature of its surroundings, the supposed cause is reasonably manifest. Deaths of this order include: burns and scalds, crushing beneath falling bodies, cutting and stabbing, drowning (actual or apparent), elevator accident, explosion, falls, use of firearms, gas poisoning, hanging, and railroad accident.

2. Deaths supposedly by violence, wherein owing either to the nature of the cause or the circumstances of its operation the effects produced on the body are outwardly less manifest, and may be wholly disproportionate to the extent of the injury. Deaths of this order include: criminal abortion, blows or other forms of mechanical violence, electric shock, poisoning, starvation, strangulation, suffocation, and exposure.

3. Sudden deaths of persons not disabled by recognized disease, wherein, until the same is excluded by official medical inquiry, some mode of violence not immediately apparent may supposedly have been operative. Deaths of this order include those of persons who fall dead on the street or who die suddenly in public places, in their places of employment, or in their houses, without apparent cause. It includes deaths which may be supposed to be due to alcoholism.

4. Deaths under circumstances unknown, wherein there are no witnesses to the fact and where little or nothing may at the time be known concerning the deceased person. Deaths of this order include those of persons whose dead bodies are found in the open, in places of temporary lodgment or shelter, or in their homes, under circumstances largely or wholly negative, the cause of which cannot be properly stated without official medical inquiry.

It is provided in the statutes that the medical examiner may take charge of such cases, viewing and inquiring into the cause and manner of death; if he deems it necessary, on authority of the district attorney, mayor or selectmen of the district, in writing, he may make an autopsy in the presence of two or more discreet persons, whose attendance may be compelled by subpœna. Before making the autopsy he shall call the attention of the witnesses to the position and appearance of the body. He shall then and there make careful record of every fact and circumstance tending to show the condition of the body and the cause and manner of death, with names and addresses of witnesses, which record he shall subscribe. If necessary, the examiner may have a physician present, to whom shall be paid the sum of five dollars for his services. Other witnesses are allowed two dollars each.

The medical examiner is required to furnish the district attorney of his district a report of each autopsy and view and additional facts obtained. If as the result of his research he is of the opinion that death was the result of injuries caused by the act or negligence of the person other than the deceased, he shall notify not only the district attorney, but also a justice of the police, district or municipal court, or trial justice having jurisdiction over the place in which the body was found, and shall file an attested copy of his findings in this court and with the district attorney.

It is further provided that in every instance in which death occurs on a railroad or a street railway report shall be made of the case to the court as well as to the district attorney.

He is further required, for purposes of registration, to certify to the registration authorities the place of death and name and residence of the deceased, if known, otherwise a description of the body, together with a statement of the cause and manner of death. He is further required to transmit to the secretary of state certified copies of the records of all deaths, the cause of which he has investigated during the preceding calendar year. He is further required to make a view of every case intended for cremation.

He is required to take charge of all moneys and personal property of the deceased, found on or near the body, and deliver it to the person entitled to its custody or possession, or, if not claimed within sixty days, then to the public administrator.

He has full authority to employ a chemist to conduct toxicologic investigations to aid in the determination of the cause of death, likewise to employ a clerk to reduce to writing the results of medical examination and autopsies.

He is further required to deliver the body, after examination, on application, to the husband, or wife, or next of kin, or to any friend of the deceased, who shall be entitled to possession in the order of priority named, and if the body is unidentified or unclaimed for forty-eight hours after the examination, to deliver the same to the overseers of the poor of the city or town in which it is found, for burial.

Associate examiners serve only in the absence of the examiner and in case of the inability of the latter to perform his duties.

Medical examiners are paid on a fee basis in all counties and districts, except that of Suffolk, where they receive a regular yearly stipend of $4,000. The fee for a view of counties other than Suffolk is five dollars and thirty dollars for autopsy. There are also provisions for maintenance of an office, telephones, stenographer, etc.

The statutes provide that the magistrate of one of the courts mentioned shall conduct an inquest in all cases of accident, homicide, etc., wherein the state shall be represented by the district attorney or one of his assistants. This magistrate has the authority to bind over, as in criminal prosecutions, such witnesses as he considers necessary, or the district attorney may designate, to appear and testify at the court having jurisdiction over such crime. He naturally has authority to bind over accused persons to the grand jury.

In the City of Boston, County of Suffolk, the medical examiner has the cooperation of a special officer of the bureau of criminal investigation or police department. This officer looks up witnesses, reports and works out the cases with the medical examiner and the district attorney. The coroner's inquest is, therefore, completely eliminated and instead we have the case tried regularly before a magistrate presiding in a court of record. There are a number of special advantages in this method. One which is apparent is the fact that the magistrate only is required to hear a limited number of witnesses to war-

rant him in binding over an accused person to the grand jury, thus enabling the state to work out its case without the unnecessary and long-winded inquiry which, under the present coroner's system, often enables a guilty individual to defeat the ends of justice by providing him in advance with a set of facts which should be kept secret until the regular trial of the case.

OPPORTUNITY TO PERFORM SCIENTIFIC WORK

The most admirable part of the medical examiner system, from the standpoint of those who are seeking to elevate legal medicine into a higher position than it now occupies in this country, aside from the improvement in general which follows the separation of the two widely varying functions of the coroner's office, is the opportunity given to the examiner to develop legal pathology and perform his technical work properly. I do not wish to be understood as unduly stigmatizing the work of those who held the position of autopsy physician in that epoch of medicine preceding the promulgation of the doctrine of cellular pathology. There was necessarily in that period of darkness no possibility of expertness in autopsy investigation. Since that time, however, a great deal of light has been thrown on this dark picture. Numerous bacteriologic, pathologic and toxicologic means and measures have been brought out, one by one, each supplementing the other. These advances have been made by workers outside the field of legal medicine in most instances, yet they can most aptly be applied to the solution of medicolegal problems. One would never suspect that there was anything scientific about the conduct of a legal autopsy if he were to observe this work as it is done in most coroners' offices. In most localities there is practically no provision made for the proper performance of an autopsy. We see them conducted in barns, in livery stables, in private homes, in so-called "mortuary" rooms of hospitals and undertaking establishments, with hardly enough facilities for washing the hands of the operator, much less for accurately scrutinizing disease and abnormal conditions in all their devious and obscure manifestations. The so-called "morgue" of the average coroner's office is too often a place of resort for the morbidly curious to peer through glass windows at unsightly cadavers. The autopsy room in the so-called morgue of the average coroner's office is a huge joke, as a rule, on the very name it bears. There is sometimes at hand an operating table and perhaps running water, but one looks in vain for a weighing machine, a photographic apparatus, a microscope, a laboratory table, bacteriologic apparatus, test tubes, slides and cover-glasses of which even the humblest hospital laboratory boasts. In short, there is absolutely no possibility of anyone, no matter how expert he may be, performing all the different manipulations of this autopsy work in a manner satisfactory to the trained pathologist. The position of autopsy physician is seldom held by a pathologist, and, if it is, he has great difficulty in doing his work properly under the circumstances already detailed.

How different it is, for example, in the City of Boston, in the County of Suffolk, where I saw recently the systematic and scientific work of Medical Examiner G. B. Magrath, a man who brought to the position on his appointment the results of a number of years of experience as a trained pathologist! He informed me that it was his desire at the time of his appointment to conduct autopsies in exactly the same manner in which they are conducted in all up-to-date hospitals and teaching institutions. He has certainly carried out his initial resolutions on this point to the letter, and by doing so has advanced legal pathology many steps. He does his work either in the regular city morgue, which is fully equipped with all laboratory facilities, or else at the Massachusetts General Hospital, where, it is needless to state, similar facilities are provided.

NEED OF CHANGE IN PRESENT SYSTEM

In summarizing, I wish to emphasize my opinion that there is urgent need to change the present system of medicolegal investigation as carried out in Missouri and other states. I believe that the separation of the two sets of functions of the office will redound to the advantage of the cause of justice. I strongly urge the enactment of laws similar to those of Massachusetts, Connecticut, Rhode Island and Michigan. There the system of official medicolegal investigation closely parallels the system in the continental countries which all students of legal medicine acknowledge to be ideal. And, above all, I wish to call attention again to the recognition of the work of the autopsy physician under the medical examiner system as compared with the lack of recognition when he is a mere subordinate of the coroner's office, a subaltern in the ranks, though bearing on his shoulders responsibilities fully equal to any which are assumed by medical men in any branch of practice. In attempting to perform his work he is absolutely compelled to decide the question of the cause of death, on which often depends the life and liberty of accused individuals, under the most serious and almost insurmountable difficulties. Under the Massachusetts system an examiner may perform his duties in a most painstaking and scientific manner, backing up the result of his gross findings with the data elicited by histologic and toxicologic and bacteriologic methods carried to full completion in a well-equipped and well-protected laboratory. In view of the importance of the facts to be gleaned from a legal autopsy, and the fact that in but few instances are there facilities for the qualified expert to do his work properly and that in most instances the work is done by "slattern" pathologists, who have but little training and with no overseer or expert director, truly it is a marvel that justice can ever be done in any case that must be developed through the kindly but woefully inexperienced agency of the coroner's autopsy physician.

The Massachusetts system practically makes it imperative that the sole *raison d'être* of the medical examiner's employment shall be good autopsy work. It eliminates, by turning the fierce white light of publicity and conspicuity on this office, the possibility of performing autopsies in the "cut-and-slash," "hit-or-miss" fashion of the average coroner's office, where but a bare semblance of exactitude in observation and description of pathologic change is carried out. Some there may be who will contend that the medical examiner system does not give perfect assurance of appointment of competent men to do this work, inasmuch as it calls for appointment by the chief executive of the state, yet I maintain men of merit are more liable to be selected in this way than is the case when the vote of the people decides the issue. The conspicuousness of the office, as I have intimated, saves it from debasement and cannot help but improve the situation. Conditions in Missouri ought not to be different from those in Massachusetts, where for years merit has ruled with respect to the appointment to these positions and where one change of administration after the other has not resulted in removal from office of medical examiners on account of party politics.

I therefore urge, particularly on the medical profession, the need for a reformation along this line. They

should be interested and should put their shoulders to the wheel in improving a condition which, to my mind, is a discredit to them. They have permitted the present system to prevail through ignorance, inertia and lack of appreciation of the chance for improvement in legal autopsy manipulations. Yet the profession to-day is active in endeavoring to increase the efficiency of all that is embodied in that department of medical endeavor called "state medicine." This movement properly is a part of state medicine and should receive their hearty endorsement. I need not remind them that every instance in which the findings of coroner's autopsy physicians have been successfully combated by opposing private experts is a direct slap in the face of professional honor.

Many of us have seen or have heard of failure of the state to prove the guilt of accused persons, who seemed to be practically convicted until examination and cross-examination of the state's most important witnesses, the coroner's autopsy physicians, showed that their work was inefficient and inconclusive, resulting in acquittal of possibly guilty people for want of convincing proof. Contrast these incidents in stages where the coroner system prevails to the history of medicolegal jurisprudence in Massachusetts, where since the time of the inauguration of the medical examiner system in 1877 to the present time that state has not in a single instance failed to support the truth of the findings of her examiners! This I offer as my last and, I trust, my most convincing argument to my medical friends as to the need of purging ourselves of the taint of the present slip-shod method of conducting autopsies in medicolegal cases.

I will leave to lawyers a discussion of the arguments as to why from a lawyer's standpoint the Massachusetts system ought to be superior to the coroner's system. I need only remind them that there is a distinct incompatibility in the twofold functions of the modern coroner's office. As Mr. Theodore H. Tyndale, in an address before the Massachusetts Medicolegal Society, once said:

> If it is now difficult in the vastness of modern research, to be familiar and skilled in all branches of medicine, if it is more than mortal man can compass to know all the science of the law, how then can it be possible that one man should be versed in both, and so well versed as to be expert witness in one, and judge in the other?
>
> The qualities of mind called into exercise in the practice of the two professions are not only different and distinct, but indeed diametrically opposed to each other. "Science is armed with the microscope; Justice is blind." The scientific investigator himself seeks his facts and testifies to them. A judge never comes in personal contact with fact but receives them from others, and holds a balance between them. Who can undertake to do both—to be interested in the one and remain impartial in the other?

In conclusion, I wish to express my sense of appreciation to Dr. George B. Magrath, medical examiner for the County of Suffolk (Boston), Massachusetts, for helpful suggestions and for the opportunity of observing the systematic operation of his office; I also wish to credit Dr. R. Henslowe Wellington, deputy coroner for the County of Westminster, London, for much of my historical material which was borrowed from his admirable work, "The King's Coroner"; also Dr. Henry Cattell, of Philadelphia, for both personal and written communications.

SYPHILIS AND THE AMERICAN NEGRO

A MEDICO-SOCIOLOGIC STUDY

THOMAS W. MURRELL, M.D.

Lecturer on Syphilis and Dermatology, Head of the Genito-Urinary Dispensary, University College of Medicine

RICHMOND, VA.

Any study of a disease as applied to an entire branch of a race must necessarily take up the sociology of that race. The knowledge of syphilis as affecting the Caucasian, however profound, will not give one an insight into the conditions confronting the negro, and the chief reason for attempting this paper is the lack of statistical material on the subject and the consequent general ignorance that exists in what might be called the white zones of our country.

About seven-eighths of the entire American negro race live in our Southern States, and the Southern man is a practical authority on the subject of conditions that oppose the black man's rise in the world. This knowledge is, however, of but little value to the world at large, because it is not down in black and white. This lack of statistics on the negro is at once a great harm and reproach to the South. It is a well-known fact that the most ardent of Northern theorists, after a sojourn of some time on Southern soil, becomes an advocate of the dealings of the Southern white man with the negro problem, and it is more than probable that half of the misrepresentations that the South has had to suffer would have never occurred had there been a proper system of vital statistics registration. More than this, in the proper cooperation with the national census bureau lies one of the greatest and most feasible of the means of settling the race question, for a white man is a white man, North or South—and knowledge is power. The census-bureau has no figures that Europe will accept in vital statistics except an area known as the registration area. That area holds only 13.4 per cent. of the negro population, and no part of that area is south of the Ohio or Potomac rivers. Figures, however, cannot paint individuality, and, since the world ought to know Southern conditions, the Southern man and doctor must write, and that copiously.

The negroes of Richmond, Va., are of the highest type of the race in the South. Many of them are educated and property owners, men who are at the head of large banking and insurance institutions; successful ministers, teachers, physicians and lawyers. These men, though quite a respectable number, indicate a possibility rather than a promise. They are the triumphs of civilization in the individual and not a type of the possibilities, much less the probabilities, of the race.

To understand thoroughly what dissipation and disease has done for the negro, let us consider the terrible changes fifty years have wrought; let us consider, first, the negro of 1859, then the negro of 1909.

The negro of 1859 was not a free agent, and valuable only as a form of energy. He was a business proposition and, to get an interest on his investment, it was the business of his owner that this machine should be able to run at a proper potentiality. To this end the negro was not allowed to abuse his body, but, on the contrary, was made to preserve it. His cabin was well ventilated and his clothing was warm and sufficient. The food was plentiful and nourishing and his life was one of well-regulated sobriety. When sick, his master's own physician attended him and by a forced system of

hygiene the negro's body, as a piece of property, was not allowed to deteriorate.

True, education was not encouraged, and everything tended to make the negro of that time a physical man. With as good hygiene, and less dissipation, he outstripped the white race in fecundity, for from 1800 to 1860 his increase was 346.1 per cent., while the white increase was 312.9 per cent. After 1808 this increase was a natural one, as the importation of slaves was made illegal at that time.

When the curse of slavery—for it was a curse—was removed from the white man's shoulders, misguided theorists transferred it, under the name of freedom, to the unready negro—and it crushed him. Whatever the motive that guided the pen which decreed absolute suffrage, it stands as one of the world's great tragedies, for now the negro was free, not to live but to die, and he took advantage of his freedom. He was free, indeed—free as the birds of the air—free to get drunk with cheap political whisky and to shiver in the cold because his scanty savings went to purchase flashy and flimsy garments—free never to bathe, and to sleep in hovels where God's sunlight and air could not penetrate—absolutely free to gratify his every sexual impulse; to be infected with every loathsome disease and to infect his ready and willing companions—and he did it—he did it all. The result is the negro of 1909, the negro of to-day.

He is, as a rule, but a sorry specimen, for disease and dissipation have done their work only too well. The insane asylums are overcrowded, for insanity has increased over 1,000 per cent. in fifty years. The death-rate has increased, being in the registration area 30.2 per cent., as compared to the white rate of 17.3 per cent.

In the Southern States a peculiar condition arose. When the birth-rate became a plaything of sexual impulse and this in a stalwart race, there was a large increase and one of the maximum increases in the negro race, as a whole, occurred between 1860 and 1880. These children, the product of this carnival, were degenerates as compared to their forbears, and their offspring have been barely over one-fourth as much as the decade preceding. This has brought the increase of the race down, so that the figures now stand as to increase of population from 1860 to 1900 in the Southern States—white, 134.9 per cent., negro 93.4 per cent.

Morality among these people is almost a joke and only assumed as a matter of convenience or when there is a lack of desire and opportunity for indulgence, and venereal diseases are well-nigh universal. As an illustration of this: In clinic and private practice I have never seen a negro virgin over 18 years of age. Consultations with old men in the profession have yielded only two undoubted cases. Of course, there are many more, but it is terrible to hear a man in active and steady practice for fifty years, practicing both in country and city, proclaim his experience to be the same as my own. In an investigation among negroes of all classes, the average age of defloration was found to be about 15, and these estimates are not unfair to the race, as a whole, for they are gained from experience with a part of the negro population that enjoy exceptional advantages for education and improvement.

Marriage is common among them and desertion as common. Due to the recent passage of laws making desertion a crime, we find the applications for legal divorce outnumbering the white very greatly.

There is an element of grim humor to the Southern man in the statement of the census-taker, as published in Bulletin 38 of the Department of Labor. In our minds we can see him, earnest and perspiring, wading through a mass of misleading statements and prevarications, then filing his report:

> Legal marriage is not considered absolutely necessary. Of forty couples who reported themselves as married, only twenty were legally married in the church or by legal authorities. Numerous cases are seen of two persons legally married and yet each living with a different person and reporting as being married to the second.

The negro is ambitious, after a fashion—ambitious to shine—for pride in him means what others think of him, not what he is. Mentally he is grown, but with a curious mushroom growth, and, psychically, he is a mass of the crossed strains of civilization and barbarism. This is the negro before infection.

LIABILITY TO INFECTION

It is my honest belief that another fifty years will find an unsyphilitic negro a freak, unless some such procedure as vaccination comes to the relief of the race, and that in the hands of a compelling law.

Altruism, as a part of the negro psychology, does not exist. He is, above all, an egoist, a modern Cain, who in nowise considers himself his brother's keeper.

A negro man will not abstain from sexual intercourse if there is the opportunity and no mechanical obstruction. If it hurts him, as in gonorrhea, he will abstain, but, let the chordee pass, and the bars are down for him.

Even among the educated, only a very few will carry out the most elementary instructions as to personal hygiene. One thing you cannot do, and that is to convince the negro that he has any disease that he cannot see or feel. This is due to lack of concentration rather than a lack of faith; even if he does believe, he does not care; a child of fancy, the sensations of the passing hour are his only guides to the future.

The spread of venereal disease is dependent, to some extent, at least, on the moral status of the race, and the morals of the negro is something of which the average man of other climes has no conception. His sexual powers are those of a specialist in a chosen field. Prostitution is not a disgrace, as in the white man's sense, and the worn-out prostitute of to-day may be the woman you employ as your maid to-morrow.

Religion is essentially emotional with the negro and he frequently seems to be his own judge as to sin. Honesty is frequent and faithfulness to financial trust is common, but adultery and fornication is literally not regarded as a sin. In some manner the negro has switched the Decalogue to suit his convenience and has made himself exempt from the seventh commandment.

GENERAL RESULTS OF INFECTION

The general results of infection in the negro are all physical. There never was a syphiliphobiac in this race, for the knowledge that he is a syphilitic in nowise disturbs the negro. His idea of the medical world is that there is a remedy for every disease and that all that the doctor does is to select the right medicine. If one doctor cannot, another can, so what is the difference? He will take any treatment for awhile and readily rids himself of all that he can see or feel, then he stops and comes back when the relapsing syphilides appear. Get him well of these and the next time you see him he is with the gumma. Since in a large clinic experience

with all classes of negro syphilities, among the patients not one has gone through the usual course of prescribed treatment, a natural conclusion is that, once infected, the average negro goes on to an average result. It could hardly be otherwise than that a disease so terrible and widely spread should work great changes in these people.

Insanity has increased in a truly appalling manner and we know that syphilis is a great cause of insanity in the white. Being more common among the negroes, it must be true that it is proportionately a greater cause in them, and, if this be admitted, it must then cause a greater number of cases of unbalanced mentality in persons never confined to asylum walls. The negro who commits the unspeakable crime of rape on the white woman is not a normal well-balanced man, nor is the negro who hides the criminal from pursuing justice, though he knows all the circumstances of the case, a member of that race which protected the women and children when their masters were at the battle front. The negro woman who believes every man of the white race a candidate for her charms, did circumstances allow, is not the same woman that the Southern child revered and loved to call "mammy." A horrible mixture of evils has done its work, and high up among them I place syphilis.

Tuberculosis is often spoken of as the scourge of the negro, but there must be twenty syphilities to the one consumptive; and hundreds of the negro consumptives have syphilis to combat as well. This may sound exaggerated, but it is near the pitiless truth.

Syphilis affecting the individual negro is not to any great extent different from the disease in the whites. There are, however, a few points of difference.

From what has gone before, one would naturally conclude that, owing to the habits of this people, the disease would be more severe in its manifestations, and such is the case. Tertiary manifestations form a larger percentage of the cases and all phases are more intense. Among the eruptions there is a greater predominance of the pustular type, and rupia is fairly common. From the skin an early diagnosis is hard to make, the macular syphilides in particular being but a slight darkening of the skin. The pigmentation of the negro skin is so great that all discolorations show up as black spots and the only variations in color is the density of the blackness. From this cause the color of eruptions is no guide to diagnosis.

There is a special tendency to the papular-serpigiform conformations around the mucous outlets. Here the abraded papule takes on an enormous overgrowth due to body filth. Because of an almost invariable partial treatment there is a great predominance of relapsing syphilides.

As compared to the white, the negro's teeth are the better, and for that reason mucous patches are not so common. Gummata of all regions thus affected are common.

With the exception of the pigmentary changes, it may be justly remarked that these are all points that apply to the white races in the slums. This recalls an old Indian chief who was standing on the ice at Toronto, watching the winter carnival. He was barefooted, bareheaded, and his only raiment a blanket drawn around him. Being asked by a spectator how he could endure such intense cold with the scant covering, he replied, "Your face cold?" "No," was the reply. "Good, me all face," said the chief. The average negro is all slum

TREATMENT

The only thing we can do is to give treatment, although we can have no heart in giving it. The serum treatment of syphilis, if there ever be a successful one, is the negro's only hope, and that would have to contend with such superstition that it would have to be a compulsory law. Until then mercury and the iodids must be given, but in treating the negro one must do nothing that causes him pain—for instance, give hypodermic injections—as it is unlikely that he will ever show up for the second dose. Nor will he do anything so troublesome as the application of inunctions; with him it is treatment by mouth or nothing.

With no class of case should we try for so strong a mental impression, and under no circumstances should treatment be instituted until the negro is thoroughly convinced of his having the disease. No exaggeration is out of place in describing to him the possible dire results of not taking treatment; some good has resulted from showing the chancrous beginner the gummatous graduate, in an attempt to frighten the former to a course of self-salvation.

When the iodids are given, they should be given in fixed doses, as a teaspoonful at the time, for the negro will not take the trouble to pour out drops in ascending doses unless destruction is walking lock-step with him. It should also be remembered that a negro will take an unpleasant dose when a palatable one is neglected. Above all, do not, in any way, spare his feelings. Call syphilis the pox—be brutally plain, for any attempt to spare his feelings will only result in his belittling his condition.

Teaching him the hygiene of the disease is so hopeless that when we instruct him it would be a farce were it not a tragedy.

POLITICAL ASPECTS

Fortunately or unfortunately for the South, the negro problem is no longer a local one and is growing more national every day. If the healthy negro is a political menace, then the diseased one is doubly a social menace, and the invasion of the South by the North forty years ago has brought about an invasion of the North, and that by the man they freed.

The negroes of Southern birth, living in the North, have increased twice as fast as the negro population of the country, and in the year 1900 one twenty-fourth of the whole negro population lived in the North.

That miscegenation and its evils are more common in this part of the country is shown by the census findings that the proportion of mulattoes was greatest where the whites were in excess of the blacks.

The future of the negro lies more in the research laboratory than in the schools. This strange and pitiable creature, whose mind and body are traveling in different directions, is an ever-changing type, and new ideas have to be evolved to meet him at his different stages of mingled development and retrogression. The negro of 1859 was a fixed type and men could plan with this type as a basis; the negro of 1889 was a different man, and the negro of to-day is another. Fifty more years will, no doubt, bring another type more puzzling than those gone before, and at that time the problem will be a new one with the experience of the past, but little help to solve it.

The negro will never rise to a satisfactory place in the economics of the nation until laws are passed that

relate to him and him only, as laws are made for the Indian to-day. When diseased he should be registered and forced to take treatment before he offers his diseased mind and body on the altar of academic and professional education. In a word, he needs a paternal government—the fellowship of the republic is not his birthright or his right; he needs a Moses to bind him with a law.

17 East Grace Street.

THE SURGICAL DIAGNOSIS AND TREATMENT OF TUMORS IN AND ABOUT THE SPINAL CORD

PEARCE BAILEY, M.D.
NEW YORK

The percentage of cures in operations for tumors in and about the spinal cord is given by Stursberg as 32.2 per cent. A perusal of the complete literature of the subject will readily convince anyone that this percentage will eventually be much higher.

After operation patients have died from excessive loss of cerebrospinal fluid, from sepsis, from shock, from exhaustion. The errors have been only partly surgical, for the patients have been rendered more liable to succumb to them through diminished resistance caused by delay in operating. In a large number of the recorded cases, the symptoms have preceded operation by two or three years or more; and pending the trial of futile treatments, notably the mercurial, the chances of cure have been scattered to the winds. Errors in diagnosis, unavoidable during the formation of a complete symptomatology of this rare disease, have also helped to swell the list of failures. Cases have been overlooked, either entirely or until beyond help; operations have been waived because certain symptoms, or the lack of them, seemed to undermine all basis for interference. I have seen more than one operation given up on the ground that the tumor was intramedullary, a diagnosis practically impossible to substantiate without operation; or because pain (which may be entirely absent) was not pronounced enough to make diagnosis sure.

Until now, perhaps, conservatism has not been misplaced. But the time has surely come to widen the operative horizon. We are now in possession of new clinical guides, notably serous meningitis as a complication or a disease, the occurrence of internal hydrocephalus with its choked discs and cranial nerve palsies, and the facts that tumors exert their chief pressure at the upper pole and that faint anesthesia may be of practical value equal to that of total anesthesia. We have also learned how erratic tumors in and about the spinal cord may be, in that the course may be rapid or slow, cardinal symptoms default and the whole clinical picture closely resemble some totally different condition. In the past diagnostic efforts have been directed chiefly to the determination of the variety of tumor and of its position with reference to transverse section of the cord. But now it has been forced on us that the diagnostic consideration which outweighs all others in importance is the ever-present consciousness that a spinal cord tumor may masquerade under the guise of any one of the several chronic spinal diseases. The question used to be, "Are we sure an operable tumor is present?" It now is in every case of paraplegia coming on without known cause, "Are we sure a tumor is not present?" So we are destined thenceforth to operate more freely on the spine. Failures will be encountered; the successes will more than counterbalance them.

In the present paper I have three new cases, with operations, for record; and the after-histories of three cases which were published several years ago, shortly after the operation.

I shall also discuss certain features of the disease which bear on surgical diagnosis, and shall express certain views on surgical procedure obtained from assistance at a large number of spinal operations.

REPORTS OF CASES

CASE 1.—*History.*—A man, aged 46, was admitted to the New York Hospital in February, 1903. Two years before he had begun to have pain in the left arm. At first it was intermittent, was not severe, and could not be definitely localized. It gradually ascended to the shoulder, appeared on the front of the chest and later involved the right arm. This state of things persisted for more than a year but did not require the patient to give up his work. Several months prior to admission, i. e., seventeen months from the beginning, the pain became more troublesome, and four months before admission had reached a degree of severity at which work was impossible. At this same time it extended and invaded the legs, which latter also began to tingle and feel numb, and the feet felt dead. Contemporaneously with the downward extension of these subjective sensory disturbances the lower extremities began to lose power, a condition which progressed so that on admission the left lower extremity was almost totally paralyzed, and the right was very weak. The arms became weak, but not totally paralyzed.

Examination.—The sphincters acted normally throughout. The type of paralysis in the legs was spastic: the knee-jerks were exaggerated, and positive Babinski with a tendency to flexor contractions was present. In the upper extremities paralysis was most marked in the small muscles of the hand and in the flexors and extensors of the wrist and fingers, all more pronounced on the left side. The thumb and interossei muscles on the left were atrophic. There was some blunting of sensibility, marked in the feet, but too indistinct for purposes of localization. Localization was arrived at by the type of motor paralysis, and operation was recommended.

Operation.—This was performed by Dr. Frank Hartley. Under the fifth cervical lamina, higher than expected, was found a cystic tumor about the size of a pigeon's egg, which bulged up in the wound on opening the dura. It was connected with the pia by a poorly vascularized pedicle. Beneath the tumor the cord was flattened and pushed over to the right. The tumor was readily removed and found to be a neurofibroma (glioma?).

The patient was emaciated and weak from two years of suffering, was a poor operative risk, and died from asthenia five days after the operation.

CASE 2.—*History.*—A woman, aged 45, three years before coming under observation began to have pain and weakness in the right leg. The pain was tearing in character and radiated from the toes up the leg to the under side of the thigh into the perineum. This persisted and she tried many treatments without help. After two years she went to Germany and took the baths for seven months. The pain left her and she thought she was cured. But shortly after returning to this country the trouble in the right lower extremity returned, and to them were added similar ones in the left.

Examination.—This showed a partial spastic paralysis of both lower extremities, with exaggerated knee-jerks, foot-clonus and Babinski sign, all more marked on the right. She walked with great difficulty. As she lay quietly in bed she said she was free from pain. But any movement of the legs, either voluntary or passive, caused severe pains, which shot up the legs through the perineum to the back. There was partial anesthesia to all forms of sensory stimuli in both lower extremities. This was most profound in the feet. A line of demarcation separating normal sensibility from a slight blunting of tactile sensibility could be drawn midway between the umbilicus and pubes in front, and through the ninth dorsal spine behind. The ankles were slightly edematous, although

there was no kidney disease. She complained at times of difficulty in urination. The bowels were constipated. The vertebræ were not painful to pressure, though pressure over the ninth caused a tingling sensation in the legs.

Operation.—On Oct. 25, 1908, Dr. Robert Abbe removed the laminæ of the eighth, ninth and tenth dorsal vertebræ. The dura was found congested, non-pulsating and resistant. On opening it a purplish sausage-shaped tumor measuring 2 by 5 cm. was found adherent to the pia and was removed; the cord was badly flattened. Pathologic diagnosis, glioma.

The patient made a good surgical recovery, but her improvement while she remained in the hospital was slight, and a report six months later was not encouraging.

CASE 3.—*History.*—A woman, aged 48, began to have sensations of pins and needles in the soles of the feet five years before admission. These increased and extended to the thighs. She then developed pain in the back, and two and a half years before admission began to lose power in the legs. She was operated on for tumor of the uterus, without relief, of course, to the spinal symptoms. The pain and disability became steadily worse. The legs and feet began to jerk involuntarily and the patient complained of a sensation as though something were tightly bound about her abdomen. The bladder and rectum gave no symptoms.

Examination (Nov. 8, 1908).—The patient walked with a cane, with difficulty and uncertainty, and apparently walking was painful. Both lower extremities were in a condition of spastic weakness. On both sides there were increased knee-jerks, ankle-clonus and Babinski, all most marked on the right. There was no pronounced anesthesia but there was a diminution of all forms of sensibility reaching to the inguinal folds in front and the crests of the ilia behind. There was no deformity of the spine, though tenderness to pressure was complained of over the eleventh dorsal vertebræ.

Operation.—This was performed on Nov. 8, 1908, by Dr. Robert Abbe. The tenth, eleventh and twelfth dorsal spines were removed. A distinct resistance was felt through the dura, and on opening this membrane, cerebrospinal fluid escaped freely, and a hard tumor 2 by 1.5 cm., adherent to the dura, was disclosed. The cord was much compressed. Hemorrhage was slight. The tumor was completely dissected away and the wound closed.

Almost immediately after the operation the pulse became rapid, of poor force, and the patient became cyanotic. The temperature and pulse rapidly rose. On the day of the operation the bedside notes show the following:

	Temperature.	Pulse.	Respirations.
8 a. m.	103.2	132	28
12 m.	104.0	132	26
4 p. m.	105.4	124	30
6 p. m.	106.2	120	40
11 p. m.	107.2	140	40

Shortly after 11 p. m. on the day following the operation the patient died. There was some discharge from the wound but no infection.

This case was seen in consultation with Dr. Joseph Collins, who will report it more fully elsewhere. It is one of the many instances of rapid death following operation on spinal-cord tumor. I cannot but feel that in it, and in cases similar to it, the cause is to be connected with changes in intracranial pressure which are brought about by losses in cerebrospinal fluid. It is true that in this case the loss was not greater than in many cases which proceed favorably. And, on the other hand, a similar death has occurred even when the spinal dura was not opened. But the evidence is sufficiently strong to make it probable that that operative technic is the best by which little or no fluid is lost.

The three cases which follow have already been published, but notes as to the present condition of the patients are of interest, as they show how permanently beneficial or curative laminectomy may be.

CASE 4.—The patient, a man, aged 39, operated on by the late Dr. A. J. McCosh in May, 1900, had suffered for fifteen months, and for six months prior to operation had been unable to work.[1] The symptoms consisted in pain, great difficulty in walking, due chiefly to pain, and weakness in the left leg. The left knee-jerk had diminished, and the left leg was atrophied. There was some hyperesthesia and difficulty in urination. A soft subdural tumor was found in the region of the first lumbar vertebra. A few months after the operation the man returned to work and has been at work ever since (December, 1908). He is entirely free from pain. The knee-jerks are normal and the anesthesia has disappeared. The bladder and sexual functions are normal. The left calf is still one-fourth inch less than right. The only reminder he has of his former trouble, eight years after the operation, is that the left leg tires more easily than the right.

CASE 5.—The patient, a woman aged 32, had suffered for eleven years from the pain characteristic of spinal-cord tumor.[2] For six months before the operation it became even more severe and paraplegia developed, so that finally the patient could not walk and had to be lifted on the operating table. The left knee-jerk was absent and the right much reduced. There was anesthesia in the legs, with indefinite upper boundary. The operation, performed by Dr. Farquhar Curtis, in December, 1907, disclosed a fibrous tumor lying extradurally in the opening made by the removal of the first, second and third lumbar vertebræ. After a slow and painful convalescence, this patient recovered in every particular, so that in June, 1909, eighteen months after the operation, she is in perfect health. She walks without limp; she can run, jump, make quick movements and says she can walk ten miles. She has no pain whatsoever. The anesthesia has vanished, and the knee-jerks are both present, equal, though not lively.

CASE 6.—A boy who had suffered for years from pain and other symptoms of spinal-cord tumor consecutive to trauma, was operated on in March, 1905, by Dr. W. N. Dowd.[3] The operation consisted of removal of parts of the third, fourth and fifth lumbar vertebræ, under which was found a subdural endothelioma, 2 inches long. Reexamination in November, 1907, showed that most of the atrophy had disappeared, the knee-jerks had returned to normal and there was no longer anesthesia. There had been no root pains since the operation, though the back was still stiff and sensitive to jars. The patient is active and able to work. By the original injury the sacrum had been badly fractured. The deformity and stiffness of the back, which were the results of this, remain; and such disability as the patient has are the consequence of this bone injury. All the tumor symptoms have disappeared.

DIAGNOSIS

It is not at all within the scope of this paper to discuss the various symptoms by which spinal-cord tumors are recognized. But before passing to considerations more practically surgical it may be said that Pott's disease, erosion of the vertebra through aneurism and syringomyelia may occasionally give symptoms similar to tumor. Hysteria can hardly be so mistaken. But multiple sclerosis can and frequently does give symptoms identical with those a tumor may give. No less an authority than Nonne confessed (more honor to him!) to having operated twice, when multiple sclerosis proved to be the cause of the symptoms.

That text-books give so little attention to the differentiation between primary and metastatic tumors is probably due to the fact that metastases are usually unmistakable both from the history and from the intense local tenderness in the spine. But the diagnosis may be difficult or impossible if the metastasis is not in the bone, or if, though situated there, it is atypical in giving neither local pain nor tenderness. It has happened more than once that the metastatic character of the compression became clear only at the time of operation. To

1. Jour. Nerv. and Ment. Dis., xxx, 99.
2. Jour. Nerv. and Ment. Dis., xxxv, 316, Case 1. Patient shown at meeting of Am. Neurol. Assn., May, 1909.
3. Jour. Nerv. and Ment. Dis., xxxv, 317, Case 2.

avoid such errors, thorough examination of the whole body and more general study of the metastases in the spine will be our greatest help.

Of the various tumors which may give rise to secondary deposits in the spine, carcinomas, especially of the breast and prostate, are the most frequent. Their metastases are almost always in the vertebræ. The metastases of sarcomas are usually in the form of direct extension from neighboring parts, especially of the ribs and pleura. These may involve the bone, or be seated in the membranes, having skipped the vertebræ, or in the cord itself, without involvement either of bone or membrane. The metastases of sarcomas when the primary focus is in the nervous system itself are rarely recognized during life.

Hypernephromas have a predilection for the vertebræ in their extensions. This form of tumor is of erratic behavior and often exists in the kidney for years, giving few or no symptoms. It is finally surgically recognizable by palpation of the abdomen and by the urine showing blood-cells and sometimes the reaction of Bence Jones. In its spinal metastasis it may not lead to rapid disintegration of the vertebræ. In two cases of this character seen in the past year, in both of which the cord was compressed, it was impossible to determine from local examination whether the growth was in the bones of the spinal canal or within the canal itself.

Fibromas cannot be regarded as metastatic tumors, but by their methods of spreading and dissemination they present features which are of importance in diagnosis. In the inoperable neurofibromas which attack the caudal end of the cerebrospinal axis, the fibrous nodules often extend beyond the canal and can be felt as painful lumps in the course of the peripheral nerves. In the cervical region a number of cases are on record in which a large connective-tissue tumor in the neck (usually lying under the trapezius) was connected by a pedicle through an intervertebral foramen with a tumor mass attached to the external surface of the spinal dura. It was not determined in these cases whether the extension had been outward or inward, but the palpable tumor in the neck might have thrown light both on the histologic character of the cause of the compression and on its location. Bruns has reported a somewhat similar case in which the symptoms began as a neuritis of a brachial nerve, consecutive to a fall on the hand and which went on to compression of the cord.

Dercum has called attention to the fact that a long-standing (and apparently simple) goiter may be followed by metastasis of rapid growth in the spine.

Examination of the cerebrospinal fluid has not proved to be of great practical value in diagnosis. The fluid is generally normal, the only exception being in cases of acute disseminated sarcomatosis of the central nervous system. In this disease, rapid metastatic extensions to the spinal pia proceed from the primary focus, which may be in the cord or more frequently in the posterior fossa of the skull. The primary focus may be of gradual or rapid growth. But the metastases are rapid, resembling meningitis in their course. At the time of the metastases the cerebrospinal fluid has been found to be of yellow or brownish color and to contain an increased amount of albumin and large mononuclear (tumor?) cells.[4] The examination of the cerebrospinal fluid by means of the Wassermann test may help to throw light on the syphilitic origin of the disease. This is especially important in the diagnosis of syphilitic pachymeningitis, in the relief of which Horsley[5] has reported successful operation.

One of the chief difficulties in the clinical diagnosis of spinal-cord tumors is the extreme irregularity of their course. The onset of the disease, though usually gradual, may be very acute. A pain or a paresthesia, coming out of a clear sky, may suddenly initiate the trouble. It does not follow from such a beginning that the course of the disease is to be rapid. There is also considerable variety in the initial symptoms. While pain is the commonest one, paresthesia or motor paralysis or retention of urine may introduce the disease. The general rule that the symptoms of these tumors extend over months or years is also subject to many exceptions. Their course may be rapid enough to suggest an acute infectious disease; or they may exist, unrecognized for years, until finally the tumors find their way to the museum jars of almshouses and hospitals for chronic diseases. Even with growths of the same histologic structure and in the same position, the rate of progress varies widely. One intramedullary glioma was fatal in six weeks, while another lasted ten years.

Symptoms throughout the course of the disease may fluctuate considerably. A symptom once established rarely becomes entirely extinct, although it may become so very nearly. This is particularly true of pain. Neither the *x*-ray nor lumbar puncture have given much aid in clinical diagnosis.

In considering the course of spinal-cord tumors the history of trauma merits much attention. A number of cases are on record in which the symptoms were ushered in by an injury. Quesnel[6] reports a case in which a fall on the back (nine feet) was followed in sixteen months by the symptoms of tumor; Putnam and Elliott report a case in which a cervical tumor developed three years after a severe injury to the neck; Schultze describes a case in which a fall on the hand was followed by various abnormal subjective sensations in the hand and finally by symptoms caused by tumor of the brachial plexus. In Case 5 of the present observations the pain in the back began immediately after a bicycle collision and remained constant in the same place; and in Case 6 the tumor developed at the site of a fracture of the sacrum. In addition to being an originating cause of spinal-cord tumor, trauma also has been noted as having the effect of causing an extension of symptoms already existing.

LOCALIZATION: (A) WITH RESPECT TO THE LONG AXIS OF THE CORD

The general rules for the localization of tumors are the same as for spinal diseases generally. But, through eagerness to localize by means of purely neurologic signs, one is apt to forget that symptoms given by the vertebræ outvalue all others in focal diagnosis. Tumefaction, if present, is in the immediate vicinity of the tumor. Deformity, though rare, may be useful, and Oppenheim claims a value for percussion. Continuous pain, localized in one or two vertebræ, and pain on pressure of the same vertebræ, and of these only, are almost diagnostic. When these surgical evidences agree with any of the purely neural focal signs, the site of the tumor is determined.

In view of the long intraspinal course of the nerve-roots, especially in the dorsal region, it is important for exact localization to determine whether focal symptoms, when confined to a root area, come from the root itself

4. Nonne: Deutsch. Ztschr. f. Nervenh., 1902, xxi, 396; Rindfleisch: Deutsch. Ztschr. f. Nervenh., xxvi, 135; Grund: Neurol. Centralbl., 1906, p. 640.

5. Horsley: Brit. Med. Jour., 1909, i, 513.

6. Quesnel: Neurol. Centralbl., 1898, p. 482.

or the segment from which the root springs. Experience seems to have verified the truth of Brun's law, that such symptoms generally proceed from the segment itself, or at least from the segmental end of the nerve-root, rather than from the nerve-root in its course or at its exit from the vertebral canal; in other words, that spinal-cord tumors compress the segments of the cord rather than the roots which run over them. This is true for such symptoms as localized paralysis or anesthesia or loss of reflex. Hyperesthesia, which may be a valuable localizing sign, may result from pressure on the root itself. This symptom, therefore, forms an exception to the general rule. An instructive example of this is given by the case reported by Quesnel.[6] There was an anesthesia in the eighth dorsal segment, and hyperesthesia up to the level of the sixth. By Brun's law the seventh segment would be involved. It was not, but the seventh root was. The tumor had surrounded the seventh root and compressed the eighth and ninth segment.

Too much reliance should not be put on the referred pains as localizing signs. They are apt to be too general and felt in too indefinite an area, and, further, may be referred to far distant points; for instance, pain in the foot in cervical tumor.

In localization in the lumbosacral region, the peculiarities of the anatomy must be borne in mind. The fibers which go to make up the cauda equina surround the lumbosacral cord intimately. Here a tumor may give rise to both cord symptoms and root symptoms, making accurate localization difficult or impossible. There are, however, certain points of distinction. Tumors limited to the cauda give sacral symptoms chiefly; i. e., paralysis and anesthesia limited to the sacral plexus; very severe pain in the sacrum, the anus and the sciatics, and an almost constant involvement of the bladder. As these cases are frequently metastatic, bone symptoms are prominent. The Brown-Séquard type of symptom does not occur. Both paralysis and anesthesia are apt to be in slight degree, and the course of the disease, if the tumor is primary, is slow.

In tumors of the lumbar region of the cord, on the other hand, there may be the Brown-Séquard complex, the lumbar plexus is more involved than the sacral plexus and is involved first, and the bladder may escape. Tumors in this region may cause an ankle-clonus, with loss of knee-jerk.

Certain facts dependent on the mode of growth have to be considered in localization. Oppenheim[7] has brought up the important point that a tumor exerts its chief pressure at its upper pole. He reports a case in which the tumor extended the distance embraced between the eleventh dorsal and the second lumbar vertebræ (i. e., from the twelfth dorsal segment to the conus), but which compressed the cord at the upper limit only, as shown by the persistence of exaggerated knee-jerk and ankle-clonus. The fact that parts overlaid by a tumor can preserve their functions is well worth notice.

LOCALIZATION: (B) AS TO THE TRANSVERSE SECTION OF THE CORD

It is desirable, though not always possible, to determine the situation of the tumor with respect to the transverse section of the cord, i. e., to determine whether the tumor is pressing on the cord or growing in it, and whether it is anteriorly, posteriorly or laterally implanted. As to the first of these points, the most valuable information is furnished by the vertebral symptoms and by the method of development of all symptoms. Tumors of the vertebræ, whether metastatic or primary, are characterized by extreme and early bone tenderness. It is most constant in the cervical region, the region of greatest spinal movement, and in the lumbosacral region. In the dorsal region it may be absent. Nonne,[8] at one meeting of the Hamburg Medical Society, reported four cases of metastatic tumor of the vertebræ in which the vertebræ gave no objective signs whatever. In dural tumors, bone tenderness is not constant, is late in appearance and does not attain the severity found in tumors of the bone. Intramedullary tumors generally, though not always, have no bone tenderness.

Rapidity of growth gives a certain clue to the situation. Metastatic tumors are rapid as a rule, though they may last several years. Primary tumors of bone also are usually rapid. Extradural tumors, so frequently belonging to the classes of fibromas and lipomas, follow the longest course of all. Intradural tumors are the ones which follow the classical course, namely, a state of neuralgia, usually one-sided at first, lasting many months, with the gradual addition, one by one, of other symptoms.

Intramedullary tumors may follow a very rapid course, being fatal in a few weeks; or they, too, may exist for several years. A rapid extension upward of symptoms speaks for an intramedullary tumor.

Intramedullary tumors may give rise to the syringomyelic type of dissociation of sensations. But since this sign, so long regarded as conclusive of intramedullary involvement, is found in both extradural and intradural tumors, and in vertebral tumors, or since intramedullary tumors can also cause the exact opposite, viz.: a loss of tactile sensibility with preserved thermic and pain sensibility, this sign is no longer serviceable in differential diagnosis.

There are no reliable means for the determination of the position of the tumor, i. e., whether it is anterior, posterior or lateral. Tumors situated anteriorly cause the same characteristic pain as those situated elsewhere. Dr. S. E. Jelliffe informs me that in a case of his, verified by autopsy, an anteriorly situated tumor did not cause anesthesia. But in a case of mine, in which the extradural growth was entirely anterior to the posterior roots, objective sensory symptoms were distinct. It is well to bear in mind in this connection that a ventral situation of the tumor, as shown by Schlesinger's statistics, is rare.

OPERATIVE INDICATIONS AND TECHNIC

With a localized and increasing pain, and with the gradual addition of the symptoms of compression, no diagnosis is easier than that of a tumor in or about the spinal cord. But, as I have endeavored to show, this typical picture is by no means constant. Cases are constantly presenting themselves in which the clinical picture is either *sui generis* or else cannot positively be differentiated from other spinal diseases. All of the spinal-cord diseases which may counterfeit tumor in a way to deceive a skilful diagnostician are themselves incurable. So the question which both physician and surgeon are from time to time called to answer is whether an exploratory laminectomy is warranted in the presence of a condition which, totally inaccessible to medical remedies, might, by operation, be removed altogether, or to a degree to ensure comfort and years of usefulness to the patient.

7. Oppenheim: Neurol. Centralbl., xxvi, p. 538

8. Nonne: Neurol. Centralbl., 1903, p. 430.

Considerations as to age, general physical condition, duration of symptoms and extent of destruction in the cord may decide in the negative at once. But when these features do not of themselves contraindicate, it seems right that the facts should be fully stated either to the patients or their friends; they assume the responsibility of the decision, so that the surgeon, if he operate, operates by request.

Tumors of the vertebræ are not generally promising, though under certain circumstances operation has been successful. Sick[9] reports the removal of the laminæ of five dorsal vertebræ for an enchondroma which had extended from a rib. Recovery was rapid (report two months after the operation).

Israel,[10] operating for a painful compression of the cord, found a chondrosarcoma growing in the body of the fifth dorsal vertebræ. This was removed by a sharp spoon. Three months later the patient walked again.

By reason of the extent of movement, rapidity of growth, failing resistance of the patient, and hopeless outlook, operations for metastatic tumors of the vertebræ are rarely feasible. Perhaps, when the rate of progress is slow, operation may be undertaken for the relief of pain. Thomas,[11] in writing of a case in which the metastatic nature of the tumor was revealed only at operation, reports a complete recovery from pain and paraplegia, the report extending for six months after the operation.[12]

If the symptoms are to the effect that the tumor is not in the bones, but is in the membranes, or in the cord itself, the indications for operation are much more positive. The only contraindications, then, are the enfeeblement of the patient or evidences of irremediable destruction. This is said with a full realization of the general hopelessness of operation in intramedullary tumor. Although a few of these, growing on the surface of the cord, have been successfully removed, the chances of success in such cases are poor. But the recommendation is made general for the reason that the diagnosis of intramedullary tumor cannot be made *intra vitam* with sufficient certainty to contraindicate an operation with so high a potential for good.

Laminectomy for spinal-cord tumor is hazardous. In 26 operations reported by F. Krause, 8 patients died as an immediate consequence of the operation. This high mortality is due, in part at least, to the poor resistance of the patients. For laminectomy for other conditions is not followed by any such death rate. One lesson taught is to operate early—before the advent of complete motor paralysis, or cystitis or trophic disturbances. Another lesson is to profit by every experience to reduce the dangers.

The fact that laminæ may be removed without materially weakening the spinal column seems to have fostered the idea that the field of operation may be enlarged to suit the surgeon's convenience. Frequent reports mention the removal of five or six or even more laminæ at a single sitting.

The removal of one lamina does not give sufficient exposure to judge of the condition of the dura. But with two chipped away, the dura comes plainly into view and can be satisfactorily palpated. Assuming the localization to have been accurate, the appearances now presented vary with the situation of the tumor, both as to whether it is vertebral, extradural, intradural or intramedullary and as to its situation with regard to the transverse axis of the vertebral canal.

In this connection it is of advantage to have in mind the probabilities of situation. These may be found in the table of Schlesinger. Intradural meningeal tumors exceed in frequency the extradural tumors in the ratio of 142 to 75. A large proportion are lateral or central in situation. Thus of 76 cases, 7 only were on the ventral half of the cord. The chances are about one in three, therefore, that the operative exposure of the dura shows the tumor immediately, and the chances that the tumor is hidden from view by being behind the cord (from the position of the operator) are very slight, indeed. When so situated, the cord may cover it so completely that it is invisible and the operation fails.[13] If no tumor is found on exposure of the dura and if a probe or hook passed ventral to the dural sac encounters no obstacle, the dura must be opened. But before doing this, its color and consistency should be observed. Often in the upper or lower end of the bony gap the membrane is dark blue in color and resistant and non-pulsating. This may be taken as an indication as to which lamina should next be removed. The removal of this third lamina is nearly always necessary, but the postponement of it till this stage will often render it superfluous to remove more, and thus avoid unnecessary delay and shock. In palpation of the dura, too great delicacy can hardly be used. The increase in the paraplegia often seen after operations of this character is doubtless due to the palpation. Once the dura is opened, if the tumor does not appear immediately, the cord should be pulled gently to one side or the other to determine if the tumor is situated laterally; or a probe passed behind the cord to determine if the tumor may be situated anteriorly. If the tumor now is not found, and it is thought best to continue the examination further by removing more laminæ, experience seems to teach that it is safer to go upward than downward. The question of escape of cerebrospinal fluid seems to me very important. Until very recently no particular attention has been paid to this at operation. But the question arises whether some of the sudden deaths following these operations may not have been partly attributable to this cause. At any rate, the avoidance of this danger, if it is one, is easy by having all such patients operated on in the Trendelenburg position, or at least on a table tilted head downward. The leaking of cerebrospinal fluid after the operation, which has been the assigned cause of meningitis in certain cases, should certainly never occur, and is easily avoided by careful suturing. Once the dura is opened and the tumor shown, the responsibility of the remainder of the operation is entirely with the surgeon. Few operations offer greater opportunity for a surgeon to show his handicraft. All cases should be left to those known to have both strength and delicacy of touch, as well as accuracy and speed.

9. Sick: Deutsch. med. Wchnschr., 1905; Neurol. Centralbl., 1905, p. 428.
10. Israel: Neurol. Centralbl., 1903, p. 182.
11. Thomas: Jour. Nerv. and Ment. Dis., 1902, p. 98.
12. Patient lived for four years.

Tuberculin in Progressive Paralysis.—W. v. Jauregg, of Vienna (*Wien med. Wchnschr.*, lix, 1909, p. 2123), announced recently good results in progressive paralysis by injecting tuberculin, beginning with minute doses and gradually increasing to 0.5 gm. This maximal dose is reached in from seven to twelve injections at two-day intervals, care being taken to avoid a temperature reaction over 39 C. (102.2 F.). He asserts that improvement was almost always apparent. In some cases prolonged remissions lasting up to two years occurred. He states that when recurrence took place resumption of the tuberculin treatment again put a stop to the disease. The article contains little to warrant the claims of the author.

13. Saenger: Neurol. Centralbl., 1909, No. 3.

ANIMAL EXPERIMENTATION

THE PROTECTION IT AFFORDS TO ANIMALS THEMSELVES AND ITS VALUE TO THE LIVE-STOCK INDUSTRY OF THE COUNTRY *

VERANUS A. MOORE, M.D.
Director New York State Veterinary College at Cornell University
ITHACA, N. Y.

In subjecting to a careful analysis the results that have accrued from animal experimentation it is not easy to separate many of those which have benefited brute creation from those which have tended more or less directly to alleviate some form of human suffering. The animal experiments which led to the discovery of the facts that form the basis of our present knowledge of the action of the heart, the circulation of the blood, the mechanism of respiration, the functions of the various organs, the action of drugs, the causes of epizootics and the effects of different foods, are generally omitted in pointing out the extent and value of our knowledge of these vital subjects. As the life conditions of lower animals have been greatly benefited by the acquisition of knowledge derived from such experiments, it is not unnatural that those interested in the well-being of domesticated animals should not only wish to continue but also to add to these benefits by the use of methods already demonstrated to be efficient. On the other hand, the supporters of the propaganda against animal experimentation wish the work to be discontinued. In their arguments they fail to take into account the source of the very knowledge of physiology and pathology which they are pleased to possess, denounce the methods by which it was acquired and imply that we already possess sufficient information on subjects of this kind.

In the endeavor to ascertain the rightfulness of animal experimentation or to justify its continuance, we are confronted at the outset with certain basic questions, the answers to which must determine whether or not the routine, the investigations and the research which involve animal experimentation shall or shall not be stopped. These questions are: Shall the process of evolution of the knowledge of physiology and the diseases of animals and their prevention be arrested? Shall efficient methods of treatment be discarded? Shall the domesticated animals, dependent, as they are, on man for their protection, be subjected for future generations to the merciless cruelty of bacterial and protozoan diseases without the application of known methods to prevent them? Shall the animal industry of the country suffer continuously great losses from disease and death of animals because the methods of preventing them may cost the lives of a few individuals? Shall our export trade in animal products, which is carried on only because of the slaughter of millions of cattle, hogs and sheep, be interrupted, with all the attending consequences of this interruption in order to save the lives of a few experimental animals? In the interest of commerce, humanity and the animals themselves, the answer to each and all of these questions seems to be one and the same—no, emphatically no.

The spirit which dominates the work involving animal experimentation is the desire to add to our common knowledge new and important facts that will make possible the formulation of more efficient methods for preventing suffering and loss by death in the dumb creation. All further knowledge or better understanding of the subtle forces of Nature that produce disease and death in animals must be attained through the use of animals. The methods now in vogue for the control of epizootic diseases are based on the results obtained from animal experimentation. The diagnosis of an epizootic sometimes requires the use of animals, and many of the therapeutic agents as well as preventive vaccines demand the continued employment of living animals. No one uses sentient creatures experimentally from choice, but unfortunately there is no alternative. We must either use a few living animals as reagents and manufacturers of vital products, or subject our flocks and herds to the ravages of uncontrolled pestilences.

In the United States there are animals, exclusive of poultry, cats and dogs,[1] valued at $4,331,230,000. The United States[1] has an annual export trade in animals and animal products of $254,798,329. The acquiring of this great wealth in animals and the commercial interests involved have been possible because of the somewhat successful methods that have been formulated and applied for preventing and controlling epizootic diseases. Without their control this country could not enjoy the present benefits of its export trade. As soon as an epizootic, like contagious pleuropneumonia or foot-and-mouth disease, appears, the foreign ports are closed to the importation of animals from the infected districts. The prevention of the severe losses formerly sustained in the northern part of the United States from Texas fever has been made possible by the acquisition of knowledge pertaining to its specific method of dissemination. These illustrations are sufficient, although others could be cited, to show the importance of maintaining as complete a control as possible of epizootic diseases. From the humane side of the question, a further reason for the subjugation of these diseases is found in the alleviation of the suffering to the animals themselves from the inroads of such diseases. Again, the loss occasioned by the epizootic diseases to the individual animal owners is not entirely determined by the value of the animals that die. This is measured in part by the attending human suffering from want and privation, brought about by the loss of animals that were the only source of revenue for the purchase of necessary supplies.

In times of prosperity it is not customary for even the more thoughtful to consider seriously the sequence of events which make the existing success in the traffic of animals and their products possible. The number of the infectious diseases to which our domesticated animals are susceptible, and the suffering and loss which they formerly occasioned, are generally either unrecognized or forgotten. A mere glance at their history will show that the infectious and epizootic diseases baffled all attempts at prevention until a knowledge of their specific nature was determined as a result of animal experimentation. These investigations showed that the epizootic diseases are due to infection with some microorganism. In certain instances the specific organism has not as yet been discovered, but its means of transmission has been determined, while in others the specific cause itself has been found. With this knowledge these animal plagues can be, and are, largely controlled. It is from the knowledge derived from animal experimentation alone that it has been possible to bring the great

* This article is one of a series issued in pamphlet form by the Council on Defense of Medical Research of the American Medical Association for circulation among the public. Ten of these pamphlets are now ready, taking up the relations of animal experimentation to ethics, diagnosis, cancer, vaccination, the live stock industry, tuberculosis, typhoid, dysentery, rabies, internal secretions, protozoan tropical diseases, etc.

1. Year-Book of the U. S. Dept. Agric., 1907.

scourges of animals, like rinderpest, contagious pleuropneumonia, anthrax, Texas fever, rabies, foot-and-mouth disease, and many others, under the present state of subjugation. This has not only prevented untold suffering to millions of animals, but it has also saved them for their owners.

The fact should not be lost sight of that the diseases mentioned, as well as many others, are liable to be, and often are, reintroduced after they are successfully eradicated. This is illustrated by the destructive malady known as foot-and-mouth disease, which has been introduced and eradicated from this country at least three times.[2] This fact calls for constant vigilance and often the employment of preventive vaccines as well as other precautionary measures. The true conditions relative to the relation existing between our live-stock industry and the control of disease may be better understood by reviewing somewhat briefly the history of a few of the more important epizootic diseases.

ANTHRAX

Anthrax has been known since very early times. It was primarily a scourge of cattle and sheep, but often of other animals and of man. It caused annually the death of thousands of animals until its cause was discovered, its method of dissemination determined and a preventive vaccine brought out by Pasteur. The successful vaccination against anthrax by the use of attenuated virus which was demonstrated to the satisfaction of the scientific world by Pasteur[3] robbed anthrax of much of its terror for the cattle owners and enabled farmers to keep live stock in many localities where otherwise it would have been impossible. This was also true in America. The work of Chester[4] in Delaware, in the production and use of anthrax vaccine, which enabled farmers in the pest-ridden sections to keep cattle with impunity, illustrates the value of this work to American agriculturists. The more recent method of vaccination, involving but one injection of virus with a quantity of immune serum, described by Sobernheim[5] and used extensively in South America, is reported to have given excellent results. This means the saving of many animals.

In 1894 Chamberland[6] reported that a total of 1,988,677 animals had been inoculated in France, and the loss from anthrax had diminished from 10 per cent. in sheep, and 5 per cent. in cattle, to less than 1 per cent. in sheep and 0.25 per cent. in cattle, a saving of over $2,000,000.

Anthrax has been carried to many places in the United States, and were it not for the preventive measures that are being applied wherever it appears it would soon become a serious menace to the dairy and cattle industries of our country. This is illustrated by the outbreaks in northern New York, where in 1906 it appeared on eighty-four farms.[7] There were 170 fatal cases before immunization by vaccination could be established. More than 3,000 animals were vaccinated and the ravages of the disease were stopped. Animal vaccination since then has kept the disease in subjugation.

The number of animals that are necessary in the preparation and testing of the vaccine and in making early and positive diagnoses is not large, but the number of deaths and the amount of suffering prevented are great. So thoroughly familiar are our people with the fact that there is a preventive treatment for anthrax that it forms a part not only of their basic knowledge, but also of their working methods in protecting their flocks and herds.

CONTAGIOUS PLEUROPNEUMONIA OF CATTLE

This disease is said to have originated in the highlands of central Europe, whence it spread to every cattle-raising country in the world. It was estimated that during the first quarter of the nineteenth century this disease cost England $450,000,000 in deaths alone. The additional losses for deterioration were never estimated.[8] It was probably introduced into the United States in 1843, in a cow imported directly from Europe and taken from shipboard into a Brooklyn cattle-shed. At first its spread was not rapid, several years elapsing before it became widely disseminated in the Atlantic states. It was not, in fact, until about 1880 that it became evident to those most familiar with the disease that if it were not eradicated it would, through some one of the increasing number of avenues of transportation, soon reach the cattle ranges of the West and ruin the cattle industry of this country.

The general dissemination of this disease was due to the ignorance of the people concerning its contagiousness. In 1851 experiments[9] at Pomeraye and other places in France demonstrated its infectious nature and showed beyond doubt that it would spread from diseased to healthy animals. Owing to general skepticism, these results were not accepted until they had been many times repeated. This was particularly true in the United States. The American mind wanted additional evidence and the result was the well-known experiments made by Dr. D. E. Salmon[10] in 1884 on Barren Island. These furnished such undoubted evidence of the infectious nature of the disease that it was not difficult to obtain from Congress the necessary legislation and appropriation for instituting methods for its complete eradication. As a result every trace of this disease was removed from the United States[11] within the brief period of less than six years at a cost ($1,509,000.72) that was trifling in comparison with the losses likely to occur annually as soon as the disease had obtained a foothold among the cattle on the western plains.

GLANDERS

This is one of the oldest equine diseases known. The ancients describe it and speak of the extensive losses it produced. Many theories existed concerning its source, the most prevalent one being its transmission in some unknown way through the air. Toward the end of the eighteenth century it was demonstrated by animal experiment that the disease was transmissible by inoculation and communicable to man. In 1882 its specific organism was discovered. It is hard for us to appreciate at this time the difficulty experienced in establishing the infectiousness of this disease, notwithstanding the enormous losses it was causing annually. Skepticism died

2. Salmon: Foot-and-Mouth Disease. Year-Book, Dept. Agric., 1902, p. 643; Pearson: Circular No. 15, State Live Stock Sanitary Board of Pennsylvania, 1908.
3. Hamilton: Louis Pasteur, His Life and Labors, 1885, p. 238, D. Appleton and Company.
4. Chester: Anthrax Bacteriologic Work, Rep. Delaware Agric. Exper. Station, 1895, p. 64.
5. Sobernheim: Ueber das Milzbrandserum und seine praktische Anwendung, Deutsch. med. Wchnschr., 1904, Nos. 26 and 27.
6. Chamberland: Jour. d'Agric. prat., 1894, i, 627.
7. Burnett: The Control of an Outbreak of Anthrax, Am. Vet. Rev., 1908, xxxiii, 136.
8. Special Rep. No. 12, Dept. Agric., Washington, D. C., 1879, p. 233.
9. The report of the scientific commission appointed to make these investigations is translated in the Veterinarian, 1854, xxii, Series 3, vii, 335.
10. First Annual Report, Bureau of Animal Industry, U. S. Dept. Agric., 1885, p. 170.
11. Rusk, J. M., Sec. of Agric.: Proclamation, Eradication of Pleuropneumonia, Sept. 26, 1892.

out, however, when Loeffler and Schütz[12] were able to produce it with pure cultures of the bacillus they had discovered and, further, were able to show how its virus was disseminated through the nasal discharges from infected to well horses. Another victory was realized in the production of mallein from cultures of the glanders bacillus. By the use of this substance the disease can be detected in animals that have been exposed but which as yet do not show evidence of infection. By detecting and removing the infected horses before the disease comes in evidence and before the bacteria are escaping, the spread of the disease is checked. Glanders, like anthrax, is transmissible to man, and already a number of cases have been reported in men who have had the care of horses. Since the introduction of mallein and the enforcement of sanitary regulations compelling the destruction or isolation of infected animals, the spread of glanders has been greatly reduced. While general statistics are wanting, the importance of this disease can be understood from the fact that in ten years (1876-1886) in Prussia alone it destroyed 20,566 horses.[13]

In the United States glanders is of much significance, especially in the cities. Its early diagnosis and control are of great economic as well as sanitary importance. The methods by which to accomplish these results are the direct outcome of painstaking studies and experiments with animals.

RABIES OR HYDROPHOBIA

Among the diseases of man, none are more dreaded and in animals few are more pitiful than rabies. There is no longer any disagreement among pathologists as to the existence and dangerous nature of this disease or as to its being readily communicated from rabid to healthy animals. In the maladies heretofore cited, with the exception of contagious pleuropneumonia, the specific organism has been found, isolated and cultivated on artificial media. In rabies the search for the specific agent was unsuccessful for many years. The bodies discovered by Negri in 1903 are thought by many to be the cause. Prior to Negri's observations, however, the experiments in preventive treatment had become successful. The fact was established by experiments that when rabbits are inoculated with a bit of the spinal cord or brain of a rabid dog or other animal they will die after a certain length of time (usually from fifteen to thirty days) with definite and characteristic symptoms, and that when rabbits are inoculated by the same method with the spinal cord or brain of healthy dogs they will remain well. In 1884 Pasteur[14] made the brilliant demonstration of his method of conferring immunity against rabies or hydrophobia before a commission of scientific men appointed to make an investigation into its merits. Concerning his first inoculation in man, Pasteur wrote:

> Making use of this method, I had already made fifty dogs of various races and ages immune to rabies, and had not met with a single failure, when on July 6, quite unexpectedly, three persons, residents of Alsace, presented themselves at my laboratory. One of these, a boy of 9 years, who had been bitten in fourteen different places by a rabid dog, was saved.

At the Pasteur Institute in Paris, 9,433 persons were treated during the years 1886 to 1890 inclusive. The total mortality among those treated was 0.61 per cent. In 1890, 416 persons were bitten by dogs proved to be rabid, and among these there was not a single death. In 1891, the number of persons treated was 1,539, with a mortality of 0.25 per cent., and, in 1893, 1,790 inoculations were made with a mortality of 0.22 per cent.

Rabies has spread extensively in the United States during recent years. In 1908 there were reported in the registration area 111 deaths in man and 534 localities infected with rabies. There were nearly 1,500 people who took the Pasteur treatment for this disease.[15] In 1908 there were 1,168 positive examinations[15] for diagnosis of rabies in animals made in the United States. At the New York State Veterinary College from 1899 to 1908 a total of 496[16] examinations for rabies in animals were made. These have all come from the rural districts and the smaller cities of the state. The examinations in New York City are made at the laboratory of the City Board of Health. Of these 496 examinations, 424 were in dogs, the others in cattle, horses, sheep and hogs. The number of examinations is increasing, there being over 400 for the first ten months of this year. In Wisconsin[15] 584 animals died of rabies during the past year. Of these, 100 were hogs, 400 cattle, 28 sheep and 56 horses. These facts are mentioned to show the significance of the disease for our domesticated animals.

The Pasteur treatment has been made so effective and inexpensive, as compared with former times, that, when desired, animals bitten by rabid dogs may be treated. The material may be sent from the laboratory where made, as from the New York City research laboratory for instance, and administered by the local veterinarian. The result of the work along these lines has not only proved to be a great blessing to humanity, but also a source of great relief to many animals. As a result of the fact that the method of dissemination of rabies has been determined, quarantine and other precautionary measures are possible to greatly lessen the number of animals infected.

SWINE DISEASES

The important infectious diseases of swine known to occur in the United States are hog cholera and swine plague. The first recorded epizootic of hog cholera in this country occurred in Ohio in 1833. It gradually spread until it became a menace to this branch of animal industry. In 1899 de Schweinitz estimated that the losses from this disease alone in the State of Iowa was $15,000,000 annually. In other words, a disease supposed to have been introduced from Great Britain about 1830 had become a general and unquestioned plague by 1870. In 1903 de Schweinitz[17] found that in the blood of hogs suffering from epizootic hog cholera there was a virus that would pass through a Berkefeld filter. Continued investigations in the Bureau of Animal Industry[18] and elsewhere[19] showed that swine could be immunized against this disease by the use of serum of hyperimmunized pigs. The result of this discovery has led several states to manufacture this serum for the purpose of immunizing hogs. The saving from suffering and death to swine and the gain to the pork industry of this country resulting from this work is enormous. No one who has witnessed the suffering of hogs in outbreaks of a chronic type of hog cholera can fail to appre-

12. Loeffler and Schütz: The Bacillus of Glanders, Deutsch. med. Wchnschr., December, 1882; transl. in Micro-organisms in Disease, New Sydenham Society, 1886, p. 388.
13. Friedberger and Fröhner: Therapie der Haustiere im Lehrbuch der speziellen Pathologie, 1908, ii, 435.
14. Vallery-Radot: The Life of Louis Pasteur, ii, 219-290.
15. Kerr and Stimson: The Prevalence of Rabies in the United States, U. S. P. H. and M.-H. S., 1909, p. 7.
16. Moore: Am. Vet. Rev., 1909, xxxi, 20.
17. de Schweinitz: Cir. 14, Bureau of Animal Industry, Dept. Agric., 1903.
18. Dorset, Bolton and McBryde: Bulls. 72 and 102, Bureau of Animal Industry, Dept. Agric.
19. King: Bull. 157, Kansas State Agric. Coll; Reynolds: Bull. 113, Univ. Minn. Agric. Exper. Station.

ciate the great blessing that has come to this species of animals by bringing this scourge under control.

TEXAS OR SOUTHERN CATTLE FEVER

This disease, which has been called bovine malaria, has been known for many years in the South. It frequently gained entrance to the Northern states, where it caused heavy losses in the death of cattle. The following statement concerning the disease, which illustrates its mysterious nature as viewed in that time, is taken from Dr. Smith's report:

> It was also discovered that southern cattle, after remaining for a short time on northern pastures, lost, in some mysterious way, the power to infect other pastures and were, for the remainder of their stay in the north, harmless. Again, cattle driven over a considerable distance lost, after a time on their way, the power to infect pastures. When pastures and trails had been passed over by southern cattle, it was observed that the disease did not appear at once in the northern cattle grazing on them, but that a certain period of not less than thirty days elapsed before the native cattle began to die. More curious than even these facts was the quite unanimous testimony of the stock-owners who had had more or less experience with this disease, that native susceptible animals did not transmit the disease to other natives, and that they were harmless.
>
> In 1868, Texan cattle shipped up the Mississippi River to Cairo and thence by rail into Illinois and Indiana early in June caused during the summer of that year enormous losses of cattle in those states. Moreover, the east began to be aroused because western cattle infected with the disease had been shipped eastward for beef and were dying of Texas fever on the way, in the New York stock-yards, and elsewhere. The question as to the effect of such diseased flesh on human health was at that time entirely new and caused much uneasiness. The cattle commissioners of New York state and the Board of Health of New York City made a vigorous effort to check the importation of diseased cattle from the west, and to their effort we owe much valuable information of this disease.

By means of a careful series of experiments begun in 1889 Smith[20] found the cause of this disease to be a protozoon closely allied, if not identical, with the one discovered by Babes as the cause of a disease of cattle in Roumania, and that this organism was transmitted from the infected to the well cattle by means of the cattle-tick.

It has been repeatedly demonstrated by animal experiments that the cattle-tick is the carrier of the virus, and that in the absence of this tick Southern cattle can be shipped North at any time of the year with perfect safety to Northern stock, and that if ticks are removed from the pastures Northern cattle can live in the South. As the carrier of the virus is known, the disease can be prevented.

The discovery of the cause of this affection and its method of dissemination has led to most important results. Several of the Southern states[21] have introduced methods of immunizing Northern cattle that were shipped into the South for breeding purposes, and more recently the government has undertaken to eliminate the cattle-ticks, thereby eradicating the disease. The value of the experiments which made possible these results to the live-stock industry, and which cost but a small number of animals, cannot be estimated, either in dollars or in the suffering of thousands of cattle they have saved.

20. Smith and Kilbourn: Bull. 1, Bureau of Animal Industry, U. S. Dept. Agric., 1893.

21. Francis and Connaway: Bull. 35, Texas Agric. Exper. Station, 1899; Connaway: Bull. 37, Missouri State Board of Agric., 1897; Dalrymple, Nirrgan and Dodson: Bull. 51, Louisiana Agric. Exper. Station, 1898.

TUBERCULOSIS

Of the diseases of cattle there is perhaps no other that causes as heavy losses as tuberculosis. This affection was known in very early times, but its means of spreading was very limited owing to the small traffic in cattle. In the nineteenth century it had become, however, a source of great loss, largely because the people did not know its cause or how it was spread.

In 1865 Villemin[22] demonstrated, by inoculating healthy animals with tuberculous tissue, that tuberculosis was a communicable disease. In 1882 Robert Koch,[23] after repeated experiments on animals, discovered and isolated its specific organism. But for these and similar experiments, we should still be totally in the dark as to the cause of this disease and unaware of its communicability from animal to animal, or from animal to man.

The importance of these discoveries is too great for ready comprehension. Tuberculosis, while not characterized as an epidemic or epizootic disease, is estimated to be the cause of 14 per cent. of all the deaths in the human family, while from the post-mortem examination of the cattle slaughtered in the abattoirs of ten foreign cities and countries[24] cattle averaging nearly 18 per cent. have been reported to be tuberculous. In the United States it is estimated that probably 10 per cent. of the dairy cattle in the country are affected with tuberculosis. Dr. Melvin estimates further, on carefully collected data, that tuberculosis of food animals costs this country $14,000,000 annually. Several herds have come to my notice in which on post-mortem examination from 75 to 90 per cent. of the animals were found to be diseased.

In order to determine the extent to which the disease has spread, I have collected and compiled the results of a number of tests made during the last two or three years, but largely in 1907, by a considerable number of veterinarians to whom the New York State College furnished tuberculin. The results show that of 421 herds tested 302 contained reacting animals.[26] These herds contained a total of 9,633 animals, of which 3,432 reacted. The official tests by the New York Department of Agriculture for the years 1904-6 inclusive, kindly furnished me by Dr. Kelly, include 262 herds with a total of 3,088 animals, of which 673 reacted. They were distributed in fifty counties. These herds all came under the operation of the law. Infected animals were found in one hundred and twenty-one herds.

Sanitarians have recognized the danger of human infection from the consumption of milk from tuberculous cows, and the presence of much tuberculosis in pigs and calves fed on such milk is a practical demonstration of the transmission of the virus through this medium. The conclusion by many investigators is that from 1 to 2 per cent. of human tuberculosis, especially the glandular form, is of bovine origin.[27]

22. Quoted by Hutyra and Marek: Spezielle Pathologie und Therapie der Haustiere, I, 472; original article by Villemin in Bull. Acad. Sc., Paris (1865-6).

23. Koch: The Etiology of Tuberculosis, Mitt. a. d. Gsndhtsamte, 1884, ii; Tr. New Sydenham Soc., 1886, p. 67.

24. Statistics Collected by Freeman: Med. Rec., March 28, 1896, p. 433. In detail they are: Berlin 4.37, Munich 2.44, Augsburg 2.44, Mulhausen 3.4, Hanover 60 to 70, France 5, Paris 6, Holland 20, Pomerania 50, Mexico 34 per cent.

25. Melvin: The Economic Importance of Tuberculosis of Food-Producing Animals, Proc. Sixth Internat. Cong. on Tuberc., 1908, iv, 504.

26. Moore: Bull. 250, Cornell Univ. Agric. Exper. Station, 1908, p. 286.

27. Smith: Med. News, New York, 1902, lxxx, 343; Tr. Massachusetts Med. Soc., 1907.

There is a large literature on this subject. The report of the Royal Commission on Tuberculosis and the Proceedings of the Sixth International Congress on Tuberculosis are especially recommended for information on the transmission of bovine tuberculosis to man.

The cause of this disease, the manner of its dissemination, and the means (tuberculin test) by which it can be detected in its early stages, have been discovered by animal experimentation. The remaining step is to determine the best method for the elimination of the diseased animals. When this is ascertained, and the existing centers of infection removed, the enormous losses now annually sustained by deaths from this malady ought practically all to be averted. Judging from the known facts, it is highly probable that if attention had not been called to this disease in cattle, and a method for its early detection discovered, it would have become a more universal and destructive plague of cattle than any other that has yet visited the animal kingdom.

OTHER DISEASES

There are still other diseases of an epizootic nature that are worthy of mention and also those frequently of great local interest, which have been investigated by means of animal experimentation and robbed of much of their former terror. Blackleg and tetanus or lockjaw are prominent among these. Further, there are the animal parasitic diseases, such as trichina in pork, fluke diseases of cattle and sheep, and the tapeworm diseases of sheep. A nodular disease of the intestines of sheep[28] due to a small round-worm and one in fowls[29] due to a tapeworm were once supposed to be tuberculosis, and in the effort to eradicate them many animals were sacrificed. A disease in cattle known as the cornstalk disease, which was thought, especially in Europe, to be contagious and therefore requiring rigid quarantine, has been shown to be due to local causes and in no way transmissible from one animal to another.[30] Surra[31] was recently kept out of this country, although it was brought to our shores, because a diagnosis was possible by means of animal inoculation. Much light has been shed on the infectious diseases of poultry, such as "blackhead" in turkeys and diphtheria and tuberculosis in chickens. A new disease of fowls, a filth disease, which is frequently called fowl cholera, has been discovered and can be prevented by the adoption of a régime of cleanliness, wholesome food and ventilation. Recently Mohler has identified a serious disease of sheep, which affects the lips and legs and which was thought to be foot-and-mouth disease, as an infection with the bacillus of necrosis. While it is of much local concern, the animal inoculations proved that it was not the much-dreaded epizootic foot-and-mouth disease. Attention should also be called to the great importance of animal investigations now in progress on various serums, toxins and antitoxins, for the purpose of securing efficient remedies for the various infectious and epizootic diseases.

In zootechny, or experimentation for improving breeds of domesticated animals, the investigations have been of unquestioned importance to the agriculturists. Whatever the views on breeding may be, no one doubts for a moment that the modern breeds of farm animals are a great improvement over the original and native stock. While the natural resistance of these animals against infectious diseases may have been appreciably lessened from that of the native stock, the knowledge we possess of how to keep these diseases away from our flocks should encourage future experimentation for the purpose of raising better and swifter horses; cows to give more and richer milk; sheep to yield finer wool and more of it; and swine to grow more pork per bushel of corn.

FURTHER INVESTIGATIONS NECESSARY

A study of the efforts which have been made for the suppression of infectious diseases of animals both in this country and abroad shows that, while wonderful advances have been made, the desired results in many instances have not been fully attained. There are those who, ignorant of what has been done, and equally ignorant of what there remains to do, question the necessity for further investigations. Great as have been the achievements in the past, it must be evident to every well-informed and unprejudiced mind that still greater achievement—greater whether measured by relief of suffering or by financial gain—are within reach in the near future. The benefits to agriculture and mankind in general which have accrued from the investigations of the past are no nearer their maximum limits of success than was the practical application of steam when Fulton built his first steamboat. Knowledge of the diseases of animals made little growth until the development, by means of repeated experiments on animals, of the newer pathology, which tends to reveal the nature of these affections, thereby pointing to methods for their control. In spite of all that has been done, practical preventive medicine has barely passed its infancy, and the important investigations into the so-called general diseases and dietary disorders have hardly begun.

The demands for further investigations were never more pressing than they are to-day. If they are checked we shall experience in this country what Great Britain has already suffered. Owing to a crusade which finally found expression in a parliamentary enactment, animal experimentation has been so crippled in Great Britain that the country which should have done the most by virtue of her wide geographical possessions and vast live-stock interests for the improvement of methods of preventing and controlling infectious diseases, has done practically nothing. I quote from one of England's foremost veterinarians[32] in a plea for animal experimentation:

> No country in Europe has, possibly, sustained greater loss during the last thirty-five years than our own; yet no country, perhaps, should have suffered less. With the finest breed of horses, and the most magnificent herds and flocks in the world, and a teeming population, whose health and wealth are largely centered in these, we have entirely neglected to protect them from the ravages of disease of home and foreign origin, by forgetting to foster and encourage that science which alone can accomplish this. That neglect has cost Great Britain and her colonies untold millions.

Furthermore, experiments which have demonstrated important facts to us are not always accepted by others unless they can be and are verified. There is in human

28. Curtice: Animal Parasites of Sheep, U. S. Dept. Agric., 1890, p. 165.
29. Moore: Circ. 3, Bureau of Animal Industry, U. S. Dept. Agric., 1895.
30. Moore: Bull. 10, Bureau of Animal Industry, U. S. Dept. Agric., 1896; Mayo: Bull. 49, Kansas Agric. Exper. Station, 1895.
31. Mohler: 24th Annual Report B. A. I., U. S. Dept. Agric., 1907, p. 34
32. Fleming, George: The Contagious Diseases of Animals; Their Influence on the Wealth and Health of the Nation, and How They are to be Combated.

nature an inherent demand for visible proof. In order not to retard progress, it is often necessary that the doubting Thomases should be convinced, and the only way to accomplish this is by repeating what has already been done. This is always necessary in teaching those who are to continue the work of controlling animal diseases. In other words, a certain amount of experimentation must be carried on as a means of education.

In the practice of veterinary medicine and veterinary sanitary science, it is often necessary, for purpose of diagnosis, to make inoculations immediately. At such times every hour of delay may mean the death of many animals. In charity to dumb creation itself, therefore, there should be no restrictions to delay the work.

In order to make diagnoses, to prepare vaccines and antitoxins with which to better the conditions of animals, it is necessary that animal experimentation be continued. It is the only humane thing to do. If this work were checked, it would entail a vast amount of needless suffering on animals exposed to the various infections, and threaten the prosperity of the animal industry of the country. To spare the very few experimental animals necessary in procuring life-saving results would require annually the sacrifice of tens of thousands of other and more valuable animals to all sorts of infectious diseases. The time has come when every humane individual must protest against interference with animal experimentation.

Most animal experimentation does not inflict great suffering. Anesthetics are freely used, and experimenters do not permit unnecessary pain. In most cases the animals used in experimentation have a more comfortable life and a far easier death than those that have the freedom of Nature and allowed to perish by the so-called natural diseases. Those who have witnessed the prolonged suffering endured by large numbers of wild animals that die from chronic diseases will verify this statement. The pain inflicted in those experiments in which anesthetics cannot be administered is not usually greater, and is often much less, than that resulting from the violent death experienced by many animals in their natural surroundings. No one who has observed the suffering of animals while they are dying with one of their many natural diseases, or because of the cruelty of beasts of prey, can feel that animal experimentation, as practiced in recent years, imposes as cruel a death as do the unalterable laws of Nature. The objectionable vivisection practiced in earlier days in veterinary colleges no longer exists.

When, therefore, the subject of animal experimentation is considered broadly, and in the light of natural laws which give a limited life period and certain death to every individual, it resolves itself into the simple question: Shall the lives of a few animals be shortened because of experimentation? Men and women are allowed wantonly to shoot and trap innocent animals and birds simply to gratify an appetite for brutal pleasure, or to procure furs and plumes for adornment and use. We permit unlimited slaughter of young animals for human food; why, then, should we hesitate to shorten the lives of a few that thousands of others may be protected from disease and suffering? The investigations involving animal experimentation have the broadest economic and humanitarian value, and they therefore should not be retarded by misguided sentimentalism.

THE ETIOLOGIC CONTROVERSY REGARDING PELLAGRA

HOWARD D. KING, M.D.
NEW ORLEANS

Who shall decide, when doctors disagree,
And soundest casuists doubt, like you and me?
Pope, Epistle to Lord Bathurst.

Since the inception of the discussion relative to the disease pellagra, which now occupies the attention and interest of the profession and the country at large, especially the South, much has been said and written concerning the malady. While on the whole the contributions contain much that is valuable, yet into the published reports of these investigations have crept many errors and divergencies, notably with respect to the etiology. The interest in the disease is apparently so extensive that I believe that I am justified in offering the subjoined review of the findings and theories of those members of the profession whose labors on the subject have justly caused them to be regarded as foremost authorities.

The expressions of the early clinicians who in dealing with this disease likened it to rare and little known forms of lues, leprosy and scurvy, while of some slight importance from the standpoint of comparative diagnosis, are only of historic interest to-day and a tribute to their labors, however unproductive. Benvenisti, Sprengel, Della Bona and Huester,[1] all of whom regarded it as a degenerate form of leprosy, as we know to-day, erred in their diagnoses. Pellagra is at this date regarded as a distinct disease, possessing morbid phenomena peculiar to itself. Those few students, among them Cecconi[2] and Le Fers,[3] who believe the disease to be a symptom-complex or *morbus miseriæ* and regard the different symptoms as prodromal of some condition other than pellagra, are fortunately in the minority, and the evidence on the subject is almost conclusive that the members of that group are laboring under a false impression. Creighton[4] says: "That pellagra is not a *morbus miseriæ*, pure and simple, wanting some more and specific cause, will be at once apparent when we consider that the misery of living is as old as the human race, whereas pellagra is a disease of the last hundred years or so, and that in Ireland, Russia, Upper Silesia, Galicia or other headquarters of the *morbus miseriæ*, pellagra is unknown."

The study of pellagra has resulted in the development of several classes of students, of which at this time we are chiefly concerned with two—the zeists and the antizeists. The zeistic advocates, while treating corn as the causative factor, in the main hold radically different views as to the means by which the disease is superinduced; that is, whether it is due to (a) deficiency in the nutrient value of the maize; (b) the existence of a definite toxic substance in normal maize; (c) postingestive elaboration of toxins; (d) elaboration of toxic substances during the decomposition of maize; or (e) bacteria, molds or protozoa. The antizeists decline to accept the corn theory, averring, on the contrary, that the cause may be other than the use of corn; they cite very force-

1. Sambon, Louis W. (quoting the other authors named): Brit. Med. Jour., 1905, ii.
2. Cecconi, H.: Erythèmes pellagreux et érythèmes pellagroïdes, Thèse, Paris, 1903.
3. Le Fers, F. L. M.: La pellagre des Landes dans le passé et dans le présent, Thèse, Bordeaux, 1907.
4. Creighton, Charles: The Encyclopædia Brittanica, Ed. 9, xviii, 476.

ful, though not so authentic, arguments against it. The antizeists are evidently influenced by the work of such men as Sambon and Manson, who are rather inclined to believe the disease to be protozoal in its nature.

It is not too much to say that our knowledge of the causation of pellagra is purely conjectural. Despite the vast amount of work done by prominent investigators since the year 1776, when the *Società Patriotica di Milano* offered a prize for the determination of the cause of the disease and a means of combating it, the real cause appears to-day to be as remote as at any time in the past. The ultimate cause of pellagra is unknown. The almost universal belief is that there is some distinct relation between the use of corn as food and the appearance of the disease. This opinion, though built on purely circumstantial evidence, is too profound and deep-rooted to permit of rejection, except in the case of demonstrative proof to the contrary. What this exact relationship is or the precise manner in which the ingestion of the damaged maize proves itself the etiologic factor, has not yet been determined. Whether the disease is an ordinary intoxication (toxicochemical), an autointoxication (toxico-infectious), or a specific infection caused by bacteria, molds or protozoa, is also a matter which awaits solution. Apart from the view that damaged maize is the definite causative agent, there must be considered those conditions which tend to lower vital resistance and thus prove an indirect, though important, etiologic factor in the causation of the malady. The conditions referred to are alcoholism, excessive venery, lowered resistance (through previous illness, especially lues, malaria and ankylostomiasis), lack of nourishment, illiteracy, lowered moral atmosphere, poor hygienic surroundings, and the general conditions which usually accompany poverty and ignorance. Rohrer[5] believes that chronic diarrhea and dysenteric disorders, especially of an ulcerative type, can also be regarded as possible predisposing causes. He further adds that impure drinking-water may bring about these intestinal lesions and thus open up avenues of entrance for infection with pellagra.

That the effect of the actinic rays has some remote bearing on the disease, especially the cutaneous lesions, is not improbable. Gherardini[6] varied the usual systematic arrangement of the erythema seen in pellagra by displacing certain parts of the wearing apparel; and Hameau[7] obtained differently shaped patches of erythema by fenestrated gloves. Kreibich[8] has found that at the onset of summer sunlight affects the skin, which may become thickened and pigmented. These facts offer sufficient evidence that the actinic rays are not to be entirely disregarded, especially as to the production of the erythema, when considering the etiology of pellagra.

Notwithstanding that damaged maize is looked on as the incriminating factor in the production of the malady, we must bear in mind that sound maize is a food possessing high nutrient value, and to eliminate it from our dietary would not only be unscientific, but absurd.

Scores of investigators have at various intervals proclaimed the discovery of the cause of pellagra. Hardly had their announcements been made than subsequent investigators discredited their findings. The laboratory findings of one investigator were never confirmed by those of another. Thus, to-day we have an endless array of those who claimed at one time or another to have discovered the etiology of pellagra. From corn many things have been extracted and held responsible for the production of pellagra. Selmi[1] demonstrated the presence of ammoniacal acrolein in damaged maize; Pellogio[1] (1876) extracted from spoiled maize an acrid substance which gave rise to symptoms of paralysis; Hansemann[1] extracted from diseased maize a narcotic tetanic toxin, to which he gave the name "maizina"; Monselice[1] (1881) analyzed various substances collected from damaged maize and was unable to find any alkaloid. He called attention also to the fact that there was a difference between artificially fermented maize and ordinary damaged maize. Tardieu[9] claimed that pellagra was caused alone by cryptogenetic changes in this grain, but admits, with Bouchardet,[10] that different cereals, such as maize, may be attacked by verdet or blight. Gintrac[11] also admits that if altered maize is not the only specific cause of pellagra it at least contributes greatly to the introduction of the malady in subjects of ill-nourished constitutions and living amid poor hygienic surroundings. It was Gintrac[11] who pointed out to Landouzy[12] the divergencies between the pellagrous erythema and the erythema of other conditions.

The theory as to the nutritive deficiency of maize was first advocated by Giambattista Marzari[13] about 1810, when he called attention to the probable relation between maize and pellagra. He stated that corn, and especially the poorer qualities of it, lacked sufficient gluten to make a good food and was, therefore, the true cause of pellagra. Strambio, the elder,[14] was of the same opinion as Marzari and asserted that the corn was deficient in nitrogen because it was sown late and gathered green. Lusanna and Frua[15] and others later were of the same mind as Marzari and Strambio, though their efforts to prove that pellagra was due to lack of nutrient material in maize were futile. Costallat[16] considered pellagra as due to slow poisoning from maize attacked by blight, which rendered it unfit for food in that it was deficient in gluten. He said that the maize was attacked by a mushroom parasite under the episperm of the maize, which became admixed with the starch of the grain.

The idea that sound maize contains certain toxic substances which cause pellagra is now a discredited theory, by reason of the fact that pellagra is absent in so many places where maize is and has been for long periods extensively raised and used as food. The experiments of Lucksch[17] at Leipsic, in 1906, tend to show that an

5. Part of the transactions of the National Conference on Pellagra, held at Columbia, S. C., Nov. 3 and 4, 1909. Special abstract in THE JOURNAL A. M. A., Nov. 13, 1909, liii, 1659. A brief summary of all the papers read at the conference may be obtained in the Public Health Reports of Nov. 12, 1909, xxiv, No. 46. The complete transactions of the conference will soon be published under the auspices of the South Carolina Board of Health.

6. Gherardini, Michael: Descrizione della pellagra, Milan, 1780.

7. Hameau: De la pellagre des Landes. Bull. de l'Acad. de méd., ii, 7; x, 790.

8. Kreibich: Wien. klin. Wchnschr., 1904, p. 1459.

9. Tardieu, Ambroise: Pellagre, Dictionnaire d'hygiène publique et de salubrité, Paris, 1854, pp. 38 to 48.

10. Bouchardet: Pellagra, Lancet-Clinic, Sept. 18, 1909, p. 310.

11. Gintrac, H.: Dictionnaire de médecine par E. Littré et Ch. Robin, Paris, 1865, Ed. 12, p. 1112.

12. Landouzy, M. H.: De la pellagre sporadique, Paris 1860; Deuxième leçon clinique, Précédé de l'examen de quarante pellagreux réunis à l'Ecole de médecine, Paris, 1861.

13. Marzari, Giambattista: Saggio medico-politico sulla pellagra, Venezia, 1810; abstr. from Osservazioni del Dr. Cerri, intorno al saggio medico-politico sulla pellagra, Milan, 1811; Memoria sopra la pellagra, Venezia, 1815.

14. Strambio, Cajetan: De pellagra; observationes in regio pellagrossorum nosocomi factae a calendis anni 1784, usque ad finem anni 1785, Milan, 1785 (i), 1787 (ii), 1789 (iii); En allemand, par Charles Weigel, Leipsic, 1796.

15. Lusanna and Frua: Su la pellagra, Milan, 1856.

16. Costallat, A.: Réponse du Dr. Costallat à la lettre du Dr. Peyramale insérè dans le numero du 28 Avril 1860, du Journal de l'intérêt public de Tarbes, à propos de la pellagre, Tarbes, 1860; No es la pelagra, le enfermedad conocida en España con el nombre de flema salada, Madrid, 1861.

17. Lucksch: Ztschr. f. Hyg. u. Infectionskrankh., 1908, pp. 479-486

exclusive diet of cornmeal, even of good quality, when fed to animals (guinea-pigs, rabbits and dogs) over a long period of time, would produce emaciation, intestinal catarrh and, in the case of pigs, loss of hair, flaccid paralysis—symptoms, it must be confessed, suggestive of pellagra. Yet these experiments are not at all conclusive, for the question of personal susceptibility and idiosyncrasy must be taken into consideration. Then, again, if a man, or even an animal, lives on carbohydrates alone, the nitrogen necessary for metabolism must be derived from his tissues, and so far as this element is concerned he suffers from inanition. It is a well-known physiologic axiom that for the maintenance of healthy nutrition a proper combination of alimentary principles is absolutely necessary, no one class being capable of maintaining metabolic equilibrium for any definite period.

The toxico-infective theory is that from spoiled maize there is formed within the body certain toxic substances and that the infection is of an endogenous nature. Forcher[18] and Roussel[19] asserted that it was a disease of the corn itself which produced the toxin. Sturli's[20] conclusions are summed up in the following words: "We have to deal with an intoxication, most likely exogenous," and he adds that the toxic agent gains admission to the human organism with vegetable food.

FUNGI

Vincenzo Sette,[21] in 1826, was the first writer to declare that the main cause of pellagra was a fungus, "scimelpige," growing on maize, which, according to his theory, produced an acid decomposition of the oils of "zein" of the corn; and from this have sprung the latter-day theories of the zeists and the toxizeists. The toxizeists consider corn pathogenic in so far as injurious substances are able, under outside influence, to develop on it.

Ballardini,[22] in 1845, asserted that the disease was due to a living organism, a mold (hyphomycete), *Sporisorium maydis*, which he found in the greenish stain (*verderame*) frequently seen in the germ groove of maize grains. Lombroso[23] directed attention to the rarity of the sporisorium, and for that reason believed that it was not the cause of pellagra, but was of the opinion that Ballardini had confounded the *Sporisorium* with the *Penicillium glaucum*. Notwithstanding that a special commission reported against the probable correctness of his theory, Ballardini had many adherents both in Italy and France, notable among whom, in France, were Roussel and Costallat.

In the year 1860 Pari[24] attributed the disease to the maize smut, *Ustilago maydis*. Parsons[25] analyzed ustilago or corn smut and obtained an acid which he temporarily entitled "sclerotic acid," because of its apparent similarity to the acid (one of the active principles) found by Draggendorf in ergot. The *Ustilago maydis* was described also by Imhof.

Ceni[26] in 1902 asserted that the disease was nothing save an infection engendered by two molds, *Aspergillus fumigatus* and *flavescens*, and that the condition was a true aspergillosis. Grohe, Block, Grawitz, Koch and Gaffny, Baumgarten and Miller, Kauffman and others[1] produced experimental aspergillosis and obtained results differing from those secured by investigators who claimed to have produced pellagra. Lichtheim[1] pointed out that these differences were due to the fact that not all species of aspergilli are pathogenic and he called attention to the harmless aspergilli, *glaucus*, *niger* and *repens*, and the toxic, *fumigatus*, *flavescens*, *subfuscus*, *nidulans* and *malignus*. The *Aspergillus flavescens* has frequently been found in the human ear. In February, 1883, Dr. L. H. von Gohren[27] reported a most interesting case of "otomycosis aspergillinia," in which there were large epithelial casts mixed with vegetable parasites, the latter revealing themselves under the microscope as forms of aspergillus. They were accumulated near the tympanum, and that membrane itself was dotted with insular groups of these fungi. Workers in grain or flour frequently suffer from a pneumomycosis aspergillinia, due to the grain or flour being contaminated with the *Aspergillus fumigatus*. Ceni asserts that the spores of the aspergilli ingested with food escape through the intestines and settle in the lungs, pleura, pericardium and pia mater, from which places he has been able to isolate them at necropsy. He states also that the aspergilli attain their greatest toxicity at that period of the year when pellagrous symptoms are most predominant and that this seasonal manifestation corresponds to the "cycle of annual biologic evolution of these hyphomycetes."

Later, in association with Besta,[28] and apparently disregarding his previous observation, he ascribed pellagra to toxic substances, elaborated by the *Aspergillus fumigatus* and *flavescens*. This is a virulent and a characteristic toxin which exists almost exclusively in the spores, and Ceni determined that the media on which they grow has but little to do with its production. More recently the same investigators describe two varieties of *Penicillium glaucum* as the causative agents of pellagra. One variety, it is declared, is responsible for the acute form, and the other for the chronic form of the disease. In a space of eight years Ceni and his coworkers have announced at three different intervals that they had determined the cause of pellagra, each time incriminating some new agent. Up to the present time none of either Ceni's or his associates' theories have been corroborated. Notwithstanding that Ceni and Besta relegated the aspergilli to obscurity and espoused the presence of the *Penicillium glaucum* as the causative agent, Rohrer,[5] even at this late day, says: "It is generally conceded that the disease is caused by the *Aspergillus fumigatus*, and that the cases occurring in the fall may be due to the *Aspergillus flavescens*." Serena,[29] in 1900, remarks that the substances which are responsible for pellagra are the products of schizomycetes and not hyphomycetes.

18. Forcher: Read in conjunction with work by Roussel.
19. Roussel, Théophile: De la pellagre, Paris, 1845; Bull. de l'Acad. de méd., xii, p. 929; De la pellagre et des pseudo-pellagres: étiologie de la pellagre proprement dite, Gaz. hebd. de méd., Paris, 1866, iii, 5.
20. Sturli: Ueber die Aetiologie de Pellagra, Verhandl. d. Gesellsch. deutsch. Naturf. u. Aertze (1905), Leipsic, 1906, Part 1, 269.
21. Sette, Vincenzo: Quoted by J. H. Randolph: Some Notes on Pellagra and Pellagrins, Jour. South. Med. Assn., July, 1909.
22. Ballardini: Della pellagra del grano turco quale cause precipua di quella malattia e dei mezzi per arrestarla, Ann. Univ. di. Med., Milan, 1845, cxiv, 5, 241.
23. Lombroso, Cesare: Sull' eziologia della pellagra, R. Ist. Lomb. di sc. e lett., Rendic., Milan, 1871; Trattato profilattico e clinico della pellagra, Turin, 1892; Die Lehre von der Pellagra, 1898; transl. into German by Kurella.
24. Pari, A. G.: Essenza della pellagra degli agricoltari; nuovi studi teorico pratici—estechi anche ad una effetina pellagra scolastica, dirette alle inclite amministrative autorita, Udine 1864; Risporte alle domande ed ai desideri del Dott. Giustinano Grosoli sulla teorico della funginizazione nella pellagra, spallarzini, Modena, 1873.
25. Parsons: See letter.
26. Ceni, C.: Gli Aspergilli nell etiologia e nella patogenesia della pellagra, Riv. sper. di freniat., 1902, xxviii, 149.
27. Von Gohren, L. H.: A Case of Otomycosis Aspergillinia, New Orleans Med. and Surg. Jour., February, 1883.
28. Ceni, C., and Besta, C.: Principe tossici degli *Aspergilli fumigati* e *flavi* e loro rapporto colla pellagra, Riv. sper. di freniat., 1902, xxviii, 528.
29. Serena, M.: Sui veleni ed antiveleni del mais guasto, Ann. d'ig. sper., Roma, 1900, New Series, x, 39.

The general trend of all the investigations pursued by the European students of the disease appears to favor the *Penicillium glaucum* as the causative agent. That this should be so is most extraordinary, for the simple reason that it is the most common mold and is found everywhere and has a most varied distribution. This mold has played for the plant physiologist the same rôle that the frog has played for the animal physiologist, and has even been shown to grow on the most unlikely poisonous substances, e. g., solutions containing arsenic, copper and sulphuric acid. It is also an active agent in the destruction of wood. It does not show any particular choice in the selection of media. Maggiore and Gradenigo[1] found it within the Eustachian tube in two cases of otitis. Sandwith[2] says that there is a considerable consensus of opinion toward incriminating the *Penicillium glaucum* and that the majority of Italian literature dealing with the disease look on this fungus as the most possible cause.

Gosio[30] maintained that the commonest saprophyte of maize was the *Penicillium glaucum*, and after the preparation of a pure culture from this fungus he extracted a substance belonging to the aromatic series. Ferrati[30] experimented with a tincture of the penicillium and of the damaged maize and found it to be exceedingly toxic to rodents. De Pietro[31] observed that only a certain variety of *Penicillium glaucum* had poisonous properties and that the toxic substances did not appear before the third day; and that it was a glucosid and was found only in the spores, and had nothing to do with the culture media. De Pietro's experiments on animals produced symptoms different from those obtained by Lombroso in his experiments. Both, however, considered their cases as being pellagra, despite the dissimilarity of symptoms. Fossati,[32] in 1904, declared that he had produced pellagra by inoculating guinea-pigs with maize damaged either by *Aspergillus fumigatus* or *Penicillium glaucum*.

Constantin von Deckenbach,[33] of Jena, in 1907, in further investigating the relation between maize and pellagra, confirmed his former experiments and those of Tiraboschi[34] in 1905, and as a result is convinced that the fungus, *Oospora verticilloides* (Saccardo), which was found parasitic on the living maize plant and which produces a disease of the plant, is as important a factor in the production of pellagra as *Claviceps purpura* is in the causation of ergotism. Tiraboschi, who made a very careful study of the hyphomycetes, found on maize grains in pellagra districts, states that he never found *Aspergillus flavescens* and believes that Ceni and Besta must have confounded it with *Aspergillus varians*, which is very common.

Minor[35] is led to remark that, after reading a chapter of Ozanam's work, entitled "Histoire médicale des maladies épidémiques," it is a wonder that no clinician has called attention to the many points of clinical similarity between pellagra and ergotism. Searcy[36] says:

> In studying pellagra I have often been impressed with the similarity of the disease to ergotism. The onset, course and much of the symptomatology of pellagra resemble gangrenous ergotism in a good many respects, and knowing that gangrenous ergotism is caused from eating a fungus growth on rye, one would naturally think pellagra was caused by eating some such substance on corn. In looking for such a fungus I find smut (ustilago) resembles the ergot of rye very much. They are both fungus growths, which develop their spores in the ovary of the host plant and grow out in spurs, taking the place of grain. It would seem logical to call corn smut ergot of corn, just as you see ergot of rye, ergot of wheat.

In 1871 Lombroso[23] announced that pellagra was an intoxication, not an infection, caused by the ingestion of certain toxic substances which were elaborated in the parenchyma of the damaged maize by some form of saprophytic life. These toxins he held responsible for the disease. In association with Dupré, Erba and Brugnatelle, he extracted from maize undergoing fermentation a watery extract, an alcoholic extract, and a red oil, by means of which he declared that pellagra symptoms could be brought about in man and animals. He maintained that there were two different toxins, and the combination of the two was sufficient to produce pellagra in the same manner as sphacelinic acid and cornutin are believed to give rise to ergotism. The two poisons are (a) a narcotic substance somewhat similar to conium contained in the aqueous extract and (b) an alkaloid very much like strychnin, which is obtainable from both the alcoholic extract and the oil, which he entitled "pellagrozein." Lombroso inoculated fowls with these poisons and was able to produce the following symptoms: diarrhea, loss of feathers, wasting and death; in rodents, wasting, choreiform movements, muscular spasm and death; in men, emesis, diarrhea, desquamation of the epidermis, giddiness, dilated pupils and evidences of inanition.

Lombroso's theory is the most popular and current one to-day and is best known as the "verdet" theory. Manson[37] remarks: "These acute symptoms are in no way comparable to pellagra; identical results follow the administration or inoculation of analogous substances prepared by similar methods from wheat and other harmless foods."

Recent experiments conducted at the University of Illinois[5] indicate the most common cause of the disease of the ears of the corn to be a kind of diplodia, and this, along with aspergillus and penicillium, has been advanced as a cause of pellagra. There are well-founded instances of animals suffering from a toxemia superinduced by an excessive corn diet and also by a diet of corn gluten infected with molds. There is no doubt that there are several kinds of disease in some manner attributable to corn; but pellagra must be due to one and not to several kinds of corn-poisoning. Toxins may be developed in the intestines by fungi or bacteria as a result of a corn diet. Bonservizi[38] says that pellagra is frequent in Mantua owing to the moldy polenta eaten cold. He accounts for the scarcity of the disease in the mountainous regions of the Umbria by the fact that the polenta is eaten warm there. Recent experiments on molds have proved that none found could survive the heat of cooking. Of course, this does not exclude them as a cause of pellagra, but does it not make them seem less likely?

Majocchi,[1] in the year 1881, attributed the malady to the *Bacterium maydis*, a very motile micro-organism which he found in both good and bad corn. Claiming to

30. Gosio and Ferrati: Sull'azione fisiologica dei veleni del mais invasi da alcani infomiceti; contributo all' eziologia della pellagra, Riv. d'ig. san. pubb., Roma, 1896, vii, 961.
31. De Pietro, M.: Sui veleni di alcune muffe (contributo all' eziologia della pellagra). Ann. d'ig. sper., Roma, 1902, New Series, xii; Glucosidi di elevato potere tossico trovate nelle spore del Penicillium glaucum (Contributo all' eziologia della pellagra). Riv. pellagrol. ital, 1902, ii, 63.
32. Fossati, G.: Contributo allo studio della etiologia e patogenesia della pellagra, Bull. d. Soc. med.-chir. di Pavia, 1904, 140-7.
33. Von Deckenbach, Constantin: Centralbl. f. Bakteriol., 1907, xiv, 507.
34. Tiraboschi: Osservazioni, Riv. pellagrol, 1906, vi, 78.
35. Minor, Thomas C.: Pellagra, Lancet-Clinic, Sept. 18, 1909.
36. Searcy, George H.: Pellagra in Southern States, New Orleans Med. and Surg. Jour., lxi, No. 6.
37. Manson, Sir Patrick: Tropical Diseases, Ed. 4.
38. Proc. Third Ital. Pellagrol. Cong., Milan, September, 1906; abstr. in Thirteenth Ann. Rep. Egyptian Hosp. for the Insane, Cairo, 1908, pp. 55-59.

have found this organism in the blood, brain, liver, heart, kidneys, lungs and intestinal mucosa and in the cutaneous lesions, he ascribed the causation of the disease to it. Cuboni,[39] at a later date, found the same micro-organism in spoiled maize, the stools of pellagrins and the stools of healthy persons. Paltauf, in 1889, while employed by the Austrian government, in investigating the disease, examined fifteen subjects and found the micro-organism of Cuboni in the stool of but one pellagrin. In association with Heider,[39] he proved that maize toxins were due to certain changes induced by this organism. It is manifest that both Majocchi and Cuboni erred in their observations and that they had incriminated the ordinary potato bacillus (*Bacillus solanacearum*).

Carrarioli,[40] in the year 1896, reported finding a bacillus in the blood, stools and saliva of pellagrins, and to this organism he gave the name *Bacillus pellagræ*. By the inoculation of the toxic products of this organism he claimed to have brought about symptoms which he likened to pellagra. His work, however, was not borne out by subsequent investigators. Pelizzi and Tirelli,[41] in 1894, made experiments on dogs and rabbits, administering by mouth or injecting subcutaneously or endovenously the toxic substances obtained from cultures of the bacteria of maize. The symptoms produced they considered characteristic of pellagra. Marie[42] is of the same mind as Pelizzi and assumes it to be logical that necessary "pellagra-producing" elements once in the blood, decomposition occurs through the influence of certain bacterial ferments ingested with the maize, and undergoes toxic metamorphosis. It was Marie who suggested that the pellagrous poison may be polytoxic.

Neusser[43] is inclined to the belief that in some cases there is formed in maize a certain mother substance, a non-toxic glucosid, largely under the influence of the *Bacterium maydis*, and that in the intestines this body undergoes decomposition, producing a toxic substance. This decomposition and succeeding toxic formation can occur only when the bowel is in an already damaged condition.

De Giaxa,[44] in 1903, following an earlier inspiration of Di Donna, attached great importance to the action of the colon bacillus on sound maize after ingestion. He claims to have produced the anatomic lesions of pellagra in dogs by feeding them on porridge made with sound maize and also to have obtained the same symptoms and lesions in animals with a toxin produced *in vitro* by the cultivation of the *Bacillus coli* in maize media.

Tizzoni, in association with Fasoli[45] in 1906, states that he isolated from the blood and organs of pellagrous patients in the fulminating stage of the disease a bacillus which he found in the guinea-pig and produced therefrom a very suggestive clinical picture and anatomic lesions not unlike pellagra. In the year 1907, with Panichi,[46] he conducted a series of experiments with guinea-pigs and rabbits. In 1909,[47] in a general summary of his previous labors, he announced the isolation of this same micro-organism from the stools and blood of chronic pellagrins as well as from spoiled maize. Two easily distinguishable and distinct strains of this bacillus are described by Tizzoni, and he thinks these strains correspond to the different grades of virulence, i. e., acute and chronic. To this organism he gives the name *Strepto-bacillus pellagræ*. Lavinder[5] was unable to isolate Tizzoni's *Strepto-bacillus pellagræ*, though he followed Tizzoni's technic in several cases. He states that by ordinary cultural methods and by experimentation on rats, guinea-pigs, rabbits and chickens he found the blood invariably sterile and non-pathogenic. As a result of his experiments Tizzoni arrived at the following conclusions:

1. The elective lesion is always in the intestine, which is always primarily involved.

2. The intestinal lesion is always followed by a specific general intoxication, especially manifested on the nervous system, blood vessels and red cells, and on the liver and kidneys.

3. The toxins elaborated always show a particular affinity for the nervous system, conducing ultimately to its profound disintegration.

Wood[48] states that he has isolated from the blood of a pellagrin in the active stage of the disease a bacillus which is very active and motile. He declares that, while his observations are not sufficient for a detailed report, he believes it highly probable that this is the same organism found at various times by Paltauf, Heider, Cuboni and Majocchi. If this be so, Wood has found nothing but the potato bacillus (which was discredited by Paltauf and Heider) and in addition repudiates the alleged *Strepto-bacillus pellagræ* of Tizzoni. He asserts that the organism he has found is similar to the one of Tizzoni, and accounts for the varying descriptions by reason of the organism having polymorphous properties, which Tizzoni so amply describes.

In the opinion of Aulde,[49] the cause of pellagra is to be found in magnesium infiltration, a pathologic condition in which there is depletion of the lime content of the nuclear proteid of the corn, bearing the same physiologic relation to that process which occurs in plant life when an excess of magnesium salts causes extinction and death of the protoplasm. His opinion is that the great preponderance of magnesium and the small amount of calcium is such as to produce the "disturbances of nutrition" exemplified in pellagra.

The antizeists believe that the cause of pellagra is to be found elsewhere than in the use of corn, and in support of their contentions advance many novel arguments, which should not, however, be too lightly dismissed, in view of our present state of uncertainty as to the definite cause of the disease. It was Sambon[1] who, in 1905, considerably strengthened the cause of the antizeists by his remarkable paper. It is stated that maize was in use as a foodstuff for at least two hundred years prior to the chronicled appearance of pellagra as such. Frapolli[50]

39. Cuboni, G.: Micromiceti della cariosidi di grano turco in rapporto colla pellagra, Arch. di psichiat., 1882, iii, 353; Paltauf, R., and Heider, A.: Der *Bacillus maidis* (Cuboni) und seine Beziehungen zur Pellagra, Med. Jahrb., 1888, Vienna, 1889.

40. Carrarioli, A.: Sulla pellagra, Ufficiale san., Napoli, 1895, viii, 49.

41. Pelizzi and Tirelli: Sull' etiologia della pellagra in rapporto alle sostanze tossiche prodotte dai micro-organismi del maiz guasto, Ann. di freniat., 1893-4, iv, 304.

42. Marie, A.: La Pellagre, Paris, 1908.

43. Neusser: Die Pellagra in Oesterreich und Roumanien, 8, Vienna, 1877; Untersuchungen über die Pellagra, Wien. med. Wschnschr., 1887, xxxvii, 132-135.

44. De Giaxa, V.: Contributo alle cognizione sull' etiologia della pellagra, Ann. d'ig. sper., 1903, New Series, xiii, 367.

45. Tizzoni, G., and Fasoli, G.: Saggio di richerche batteriologiche sulla pellagra, Mem. dell' Acad. dei Lincei, Cl. Sc., April, 1906, Series 5, Vol. 6.

46. Tizzoni, G., and Panichi L.: Ulteriore richerche sperimentale sulla pellagra, Mem. dell' Acad. d. sc. dell' Ist. di Bologna, Sessione 24, February, 1907.

47. Tizzoni, G.: Intorno alla patogenesia ed etiologia della pellagra, Estr. del Boll. d. Ministero di Agricoltura, Industria e Comercio, Rome, 1909.

48. Wood, Edward Jenner: The Appearance of Pellagra in the United States, THE JOURNAL A. M. A., July 24, 1909, liii, 274.

49. Aulde, John: Pellagra—An Inquiry, New York Med. Jour., Dec. 4, 1909.

50. Frapolli, François: Animadversiones in morbum vulgo pellagram, Milan, 1771.

maintained that the disease was as "old as the sun" and none other than pellarella, as would be seen by reference to the regulations governing admission of patients to the Hospital Major of Milan at that time. In a previous article,[51] I have endeavored, with success, I believe, to prove the fallacy of Frapolli's statement.

One of the most forceful arguments vaunted by the antizeists is the uncertain correlation between areas of maize cultivation and the endemicity of pellagra, many instances being given of places where maize is extensively cultivated and largely eaten and yet pellagra is practically unknown. An examination into the method of harvesting, milling and drying of the corn in these areas will disclose certain methods not practiced in pellagrous regions. The existence of uncontaminated spots in pellagrous districts is always easily explained. Lombroso found one of these spots in Friuli, the inhabitants of which lived almost exclusively on fish. Babes found one in Roumania—a village situated in pellagrous territory, the inhabitants of which were Russian skopts (who ate no corn), and another in a district burdened with 3,000 pellagrins—a village where the people lived for the most part on wheat bread. In Ireland and in Burgundy, France, pellagra is unheard of, though corn is extensively used in both countries; but in both Ireland and Burgundy corn is dried in ovens as soon as harvested. Vezzani[38] relates the case of the commune of Carpendolo, formerly gravely infected with pellagra, but now quite free from it, in consequence of the introduction of horse flesh as a popular food.

Many keen antizeists have called attention to the prevalence of pellagra in certain districts where maize is not cultivated and among persons who have never used maize as an article of diet. Hardy,[52] Schreiber,[53] Brown and Carruthers,[54] Brown and Low,[55] Slack and McCall,[56] and Van Wart[57] have reported cases of pellagra in which maize had not entered into the dietary. Kaposi[58] says:

> Schreiber, I and others have also seen cases of pellagra in individuals who had never eaten maize but had lived like "well-to-do city" people. As some of these patients had never worked in the sun, and as one of my cases came from Bohemia where pellagra is not endemic, it is evident that there are many points in regard to the disease which are still obscure.

In the province of Badajoz, in Spain, where corn-meal is not used, cases having all the symptoms of pellagra have been noted. Lombroso[38] says: "The statement that in Spain people suffer from pellagra, without using maize, is due to the ignorance of the doctors there." Slack and McCall[56] state that, notwithstanding the work of Tizzoni, they are unable to accept the corn theory, but advance the argument that if corn were the cause, the disease among the negroes would be much more common. Hyde* asserts: "It is certain that those who had never consumed corn have had pellagra," and further adds, "It is equally certain that experimental consumption of spoiled corn by man has not resulted in the development of the disease." Mongieri[38] says: "I have seen only two pellagrous patients at Constantinople in twelve years, though much maize is used there." The deputy director of the Egyptian Hospital for the Insane, in 1906, reports that out of 182 patients admitted from maize-eating districts, "172 were found to suffer from pellagra."

Sandwith[5] says:

> One of the objections to the diseased maize theory of causation is that cases are sometimes reported of pellagra occurring among those who have never eaten maize. In examining more than 1,000 cases of pellagra, I have of course, often met with individuals who stated that they were not maize-eaters, but on cross-examination every one of them pleaded guilty of having occasionally eaten bread which was partly made from maize flour. I therefore venture to suggest that any undoubted case of pellagra should be thoroughly questioned before we inculpate a second cereal, or attempt to overthrow the belief that diseased maize is a potent factor in the etiology. . . . Two cases of pellagra[54, 55] have recently been recorded in patients who had never been out of the British Isles, but the published accounts of the disease do not tally with the disease as I know it, though the symptoms were somewhat similar to pellagra. One of the patients had never eaten maize, but had devoured raw oatmeal and rice.

Sandwith offers the two following axioms which have proved true in Italy and Egypt and states that they will hold good in the United States as well:

> 1. Well-to-do people in pellagra districts, living on varied diet and consuming maize as an occasional meal, and not as the staple cereal, usually escape pellagra.
>
> 2. Pellagra distribution corresponds very nearly with the area on which human beings live who eat damaged maize, or products made from damaged maize.

Van Wart's[57] case of pellagra, with a history of a diet free from maize, afterward proved to be a doubtful one, as others who saw the case were inclined to believe that it was a case of alcoholic neuritis, as the patient was a dipsomaniac. In this case the ingenious argument was put forth that the patient might have drunk more corn than rye whisky.

Drs. C. C. Bass[57] and R. M. Van Wart[57] believe that cases to which corn cannot be ascribed as the cause are cases of pseudopellagra. It was Roussell[19] who coined this unfortunate term, "pseudopellagra," when he replied to the observations of Landouzy and others who reported a number of cases of pellagra in which there were no histories of corn in the diet of the victims. Lavinder[60] says: "This term, pseudopellagra, has itself been the cause of confusion to some and an object of ridicule to others." Manson[37] holds the term in contempt, and derisively observes: "The disease is pellagra when it fits in with the orthodox theory and when it can in any way be connected with corn, but when this is not possible the disease becomes pseudopellagra." Sandwith[5] is led to observe: "I have never employed this word myself. I have never heard it made use of, and I know of no circumstances under which it need be used." De Jeanne,[61] in 1871, subjected these cases of pseudopellagra to a very close scrutiny and wrote: "These are maladies differing widely among themselves, and all of them very different from endemic pellagra, not only in the etiology, but also in the nature and concatenation of the symptoms."

The antizeists call attention to the following facts in support of their claims: that Lombardy, always the greatest stronghold of the disease, was surpassed by Venetia in the total number of cases, according to the statistics of 1899; that there is an increase of the disease

51. King, Howard D.: Pellagra, Ancient and Modern, THE JOURNAL A. M. A., Nov. 6, 1909, liii, 1556.
52. Hardy, A.: Traité des maladies de la peau, Paris, 1886, p. 1107.
53. Schreiber: Arch. f. Dermat. u. Syph., 1875, p. 417.
54. Brown and Carruthers: Pellagra, Practitioner, London, May, 1906.
55. Brown and Low: Pellagra, Edinburgh Med. Jour., September, 1909.
56. Slack and McCall: Pellagra, Jour.-Rec. Med., Atlanta, October, 1909.
57. Van Wart, Roy M.: Report of a Case of Pellagra, New Orleans Med. and Surg. Jour., lxii, No. 4.
58. Kaposi, M.: Diseases of the Skin, 1895.
* Hyde, James Nevins: Am. Jour. Med. Sc., cxxxix, 1.
60. Lavinder, C. H.: The Etiology of Pellagra, New York Med. Jour., July 10, 1909.
61. De Jeanne: De la pellagre en France, Arch. gén. de méd., January and February, 1866.

in centers not formerly infected and a decrease of the malady in regions formerly considered plague-spots and, notwithstanding the conditions of alimentation or husbandry (and in some instances both), have remained the same and have not undergone any change or improvement. Attention is directed to the slow spread of the disease and the fact that this spread is wide and independent of maize cultivation, and also to the fact that, once pellagra establishes a foothold in a certain region, it becomes, in a sense, permanent, though exhibiting annually a marked variance as to the intensity of its prevalence.

A common argument advanced by those who decline to accept the corn theory is that the disease does not attack indiscriminately all those who live largely on maize, but only certain members of families are affected. Especial attention is called to the condition that where an entire family lives on a corn diet only one member may be affected, and this reasonably suggests the query, "Why does not the entire family contract the disease as would ordinarily be the case if the malady were due to a poison ingested equally by all at the same time?" As many cases of a toxemic type are communicable through lactation, and pellagra is not, the question arises, "Why this difference?" and we are at a loss for a positive and scientific answer. We well know that the most usual cause of defective lactation is anemia, and it is now becoming apparent that in pellagra there is a cachectic condition (anemia); may this not in a slight measure explain the non-transmissibility of the disease by lactation?

We are taught that the disease is one of middle life, the age incidence being usually between 20 and 50, and the number of children affected being remarkably small. Recently it has been well established that children do suffer from pellagra, and that the inability to recognize it may be due to coexisting conditions which obscure a positive diagnosis. Menage[5] reports having seen pellagra in a child of 4 years, and states that the disease was then of two years' duration. Young[5] has seen pellagra in a child of 17 months; and Sosnowski[5] and King[5] have reported in their practice several cases in childhood and early adolescence.

The appearance and, then again, the peculiar reappearance of the disease just preceding the spring, with the gradual abatement of the symptoms when the weather becomes cooler, is not altogether satisfactorily accounted for by the expert zeists. This seasonal recurrence of the cutaneous lesions with the nervous symptoms of pellagra, in asylums where maize is excluded from the dietary, appear, according to the antizeists, to suggest a living organism as a causative factor in the production of the disease.

Nichols'[5] recent observations in his study of the dietary and of the patients at the Peoria Hospital apparently point to a form of endogenous intoxication and the conclusion that protozoa play an important part in the seasonal production and absorption of an endogenous toxin. Pellagrins at the Peoria State Hospital showed a very high percentage of protozoan infections of the colon. Sambon[1] suggests that the cause of pellagra may be protozoan, and Manson is a strong adherent of this view. Dr. C. C. Bass[62] of New Orleans, having obtained positive Wassermann reaction in four cases, suggested that the disease might be protozoan in origin; in a later report the same observer reported five Wassermann reactions in ten cases. After a final review of his work, Bass states that his observations are too few in number to enable him to draw therefrom any definite conclusions. Fox,[5] whose experience with the Wassermann reaction is more extensive than Bass' came to the following conclusions:

1. Cases of pellagra do not often give a positive reaction and when they do they are very weak.
2. The value of the Wassermann test is not affected by the findings of pellagra.

The complete fixation reaction with lipoid substances has been found especially in lues, but also in trypanosomiasis, kala azar, and certain cases of malaria—all diseases of protozoan origin. The reaction has not, except in rare instances, been found in bacterial diseases.

Babes, Vasiliu and Gheorghus[63] report highly beneficial results in the treatment of pellagra by atoxyl and arsenious acid. As a result of this therapeutic discovery they lay great stress on the probable correctness of Sambon's hypothesis, as it is well known that the almost specific therapeutic action of arsenical preparations on certain protozoan diseases (as on the manifestation of pellagra at least) suggest by analogy some conclusions as to a similar etiology. Coupled with the likeness between these diseases in respect to therapeusis is the fact that in pellagra and in trypanosomiasis there are the same characteristic perivascular small-cell infiltration and the mononuclear increase in the blood. The experiences of Wornock, Babcock, Wood, and Lavinder[63] do not bear out the testimony of the results obtained by Babes, Vasiliu and others as regards this similar beneficial therapy. On account of the fact that malaria, trypanosomiasis and piroplasmosis have nearly the same geographical distribution as pellagra, some observers believe that they are justified in the assumption that for the transmission of pellagra some similar intermediate host is necessary, and for the infection or intoxication itself some microscopic, or possibly ultramicroscopic, animal parasite. Taylor,[64] in two able papers, reviews at some length the antizeistic literature and endeavors to show the disease to be protozoan in its origin.

Many believe that pellagra is possibly due to some change in the maize as a result of parasitic influence, and that from spoiled maize parasites may be conveyed to the predisposed human organism either direct or by means of insects or other organisms. Is it not possible that maize may bear the same relation to pellagra as the *Stegomyia fasciata* does to yellow fever? Of course, it must not be forgotten that an uninfected stegomyia is unable to communicate yellow fever to any human being.

Savage[65] stated that it was his belief that the eating of corn was in no wise responsible for pellagra, but that the condition was a degenerative nerve disease; Rushing[66] agrees with Savage as to corn having nothing to do with the disease, and attributes the affliction to sore-mouthed canines. The last-named observer believes that the disease prevails in dogs and is transmissible to man. That the canine may be a conveyer of the disease in the same manner as the rodent in plague is possible, though not probable. Dupont[67] published reports of two cases occurring in cats, which resembled pellagra very much in sev-

62. Bass, C. C.: New Orleans Med. and Surg. Jour., lxii, No. 6.

63. Babes, V., Vasiliu, A., and Gheorghus, N.: Ueber kombinierte Behandlung der Pellagra mittels Atoxyl und Arseniger Saure, Berl. klin. Wchnschr., Feb. 8, 1909, No. 6.

63. Pub. Health Rep., Vol. xxiv, No. 37.

64. Taylor, J. H.: The Protozoan Theory of Pellagra, Jour. South Carolina Med. Assn., November, 1908; The Question of The Etiology of Pellagra, New York Med. Jour., Dec. 18, 1909.

65. Savage, Giles C.: Editorial—Continued Study of Pellagra, Boston Med. and Surg. Jour., Nov. 18, 1909.

66. Rushing, J. B.: Pellagra Contracted from Domestic Animals, New Orleans Med. and Surg. Jour., No. 8, lxii, 621.

67. Dupont: Arch. gén. de méd., Paris, 1857, ii, 592.

eral particulars. Baruino[51] called attention to a somewhat similar condition in horses in which the animal became paretic and suffered with loss of hair.

Racial differences appear to have but little influence on the disease, the negro and the Caucasian both being affected. In those regions where the disease has prevailed for an extensive period, the Hebrew has shown a remarkable immunity. In the United States most of the cases seen in private practice up to the present time have been among the blacks. Hospital, asylum and institution cases show a majority of whites to be affected. The popular impression that pellagra prevails only among the poor is, of course, an erroneous one; the poorer classes show no more predisposition than those in affluent circumstances. While agricultural classes, as a rule, are most affected, yet no walk of life can be said to be immune from the effects of the disease.

Sex apparently exerts but little, if any, influence in predisposing to this affection, men and women being affected about equally, though nervous symptoms are said to be more dominant in the female than in the male.

The disease is not hereditary, but the offspring of pellagrous parents are generally weak and puny and of lowered vital resistance and quickly fall a victim to the malady. The disease is not contagious or infectious.

I believe that through the medium of the foregoing symposium of the theories of various students of pellagra I have presented sufficient evidence to indicate the confused situation existing with respect to the exact and precise causation of the disease. A concise summary, I believe, therefore, may be useful in arriving at a definite conclusion on this point.

As is, perhaps, natural at the outset of discussion of a new problem, or new phase of some particular subject, in science as in other branches, much is said and written until usually a certain conclusion is generally accepted or, as sometimes occurs, the subject is abruptly dropped. To this rule the topic of pellagra in its various phases is no exception. We have a mass of reports and observations, we have the testimony of researchers at places both far and near, and generally each worker has labored not only without regard to the results obtained by his predecessors, but followed, often blindly, his own theory or pet predilection, although, indeed, there are two main schools of etiologic theory, that of the zeists and that of the antizeists. The result is, indeed, far from satisfactory.

Foremost among the zeists—those who believe that the use of damaged maize is responsible for the disease—we find such eminent students as F. N. Sandwith, J. W. Babcock, E. J. Wood, and C. H. Lavinder, as we have noted above. They present their side of the case with ability and at times convincing earnestness; yet, on the other side, among the antizeists, who believe that the malady may be and is caused by other factors than the use of diseased corn, and notably by protozoa, we find Louis W. Sambon and Sir Patrick Manson, who labor no less zealously to prove the correctness of their theories.

The plain truth is that in few, if any, instances do their conclusions harmonize. Experiments of the most careful and doubtless accurate nature have been made by both groups, and the result is always the same—divergencies. Thus, for example, Tizzoni asserts that the *Strepto-bacillus pellagra* is the cause of the disease, and shortly afterward his findings are not substantiated by Lavinder. This is but one illustration; innumerable others are found elsewhere in this article.

It remains only to add that in no instance brought to my attention have Koch's postulates been fulfilled.

2131 Baronne Street.

PRACTICAL DEDUCTIONS FROM URINARY FINDINGS IN DIABETES

WILLIAM LINTZ, M.D.

Associate Pathologist to the Brooklyn Jewish Hospital; Instructor of Bacteriology at the Long Island College Hospital

BROOKLYN

Since the days of Aretæus, 150 A. D., the first to use the term diabetes—the Greek word for siphon, the fanciful analogy being invoked by three of the cardinal symptoms of the disease, namely, thirst, emaciation and diuresis—the urine has always been looked on as the chief source for diagnosis in diabetes. Hippocrates, Celsus and Galen, in describing this malady, make continuous reference to the "sweet and honey urine." Glucose was first isolated and demonstrated in the urine in 1770 by Matthew Dobson of Liverpool.

With the recent remarkable advance of medicine, particularly with the progress of pathology and physiologic chemistry, the finding of diabetic urine not only makes the diagnosis of the disease, but throws light on the etiology, gives valuable aid to the surgeon and obstetrician in solving their problems when diabetes occurs as a complication, and is the guiding star in diagnosis and treatment.

In order that our deductions may be of practical use, our findings must be correct. This, of course, is axiomatic. This leads me to consider the various sugar tests, and the mistakes frequently made, as found by practical experience.

1. Specimens of diabetic urine are frequently examined and no sugar found; for it is a well-known fact that during some hours of the day, particularly the early morning hours, the urine may be free from sugar; and unless a twenty-four-hour specimen is examined sugar tests may prove negative. The quantity of sugar excreted during the different hours of the day is so variable, depending largely on the amount and nature of food ingested, that for a correct quantitative sugar estimation a twenty-four-hour specimen is imperative.

2. Very important is the fact that in diabetes mellitus the sugar may at times disappear from the urine, while its elimination is replaced by excessive excretion of uric acid or phosphates. Glycosuria, however, may be brought on with ease by the ingestion of 100 gm. of glucose, as the examination of the urine three or four hours afterward will demonstrate.

3. Many undoubtedly have noticed how readily a diabetic urine becomes turbid on standing. This turbidity is due to the fact that diabetic urine is an excellent culture medium for the yeast-cell, and an extremely luxuriant growth takes place in a very short time, particularly in warm weather. This fact is of practical importance, as it indicates that suspected urine should be examined qualitatively and quantitatively as soon as possible; for yeast causes, as is well known, fermentation of the sugar; where the amount is small, it may cause a complete disappearance of the glucose, and in all cases will cause a reduction in the percentage of glucose on a quantitative examination.

The substances, aside from glucose, which will reduce the various copper solutions are legion. For practical purposes, those which are most frequently encountered in the urine, and which must be eliminated, are conjugated glycuronic acid (eliminated after the taking of certain drugs), alkapton, creatinin, uric acid in excess, blood and lactose. A word about the last two substances will not be amiss.

A point which I observed some time ago, and which I fail to find mentioned anywhere, is the fact that not infrequently the urine of menstruating women will reduce the various copper solutions. After making various tests, I am fully convinced that the reduction is due to the menstrual blood mixed with the urine. This fact is of prime importance, as it behooves us not to jump too readily from the results obtained by reduction tests to the conclusion of the presence of diabetes in those cases in which the suspected urine is liable to be contaminated by menstrual blood or by blood from any other source.

As to lactosuria, in a large percentage of cases, lactose is excreted in the urine, as recently shown by Henkel,[1] not only during the latter months of pregnancy and puerperium, but also when there is a blocking to the secretion of the mammary glands from any cause whatsoever. Therefore it is not at all infrequent to find a sugar reduction in the urine of such patients. But this comparatively insignificant lactosuria must not be confounded with diabetes, with which it has nothing in common. Such a case came under my observation recently in a doctor's wife. A lot of unnecessary worriment could have been avoided if, in addition to the Fehling, a simple fermentation test had been done; for yeast does not ferment lactose, but does ferment glucose.

The following are approved sugar tests:

Qualitative:

1. Fehling's test.
2. Trommer's test.
3. Phenylhydrazin test.
   Korwarsky's modification.
4. Nylander's test.

Quantitative:

1. Fehling's test.
2. Pavy's test.
3. Rudisch's test.
4. Fermentation test.
   (a) Einhorn's saccharometer.
   (b) Lohnstein's saccharometer.
5. Polariscopic method.

It is surprising how easy it is to eliminate the previously mentioned reducing substances, other than glucose, by the simple Fehling test, provided that is properly done; that is, after boiling the solution and adding urine, drop by drop, it should not be boiled again, but simply warmed. The reason for this is that all the other substances mentioned require the boiling temperature before they reduce copper solutions, whereas glucose will reduce at a much lower temperature. Furthermore, if the reduction of Fehling is rapid, we can be reasonably certain that glucose is the reducing agent. But if it is slow and slight, and especially if the precipitate be yellow rather than red, other reducing agents must be considered and eliminated. The best method, to my mind, the most reliable of them all, should be resorted to, namely, the fermentation test. The only point to bear in mind is that, as yeast itself may cause a small evolution of gas, a control test with normal urine should always be made. The other substances mentioned do not ferment.

For quantitative sugar estimation Rudisch's test is both reliable and accurate.

With these precautions in mind, let us see what practical deductions we can obtain from the examination of a diabetic urine. We find that it is of pale straw color or almost colorless from the large quantity of water which it contains. In quantity it may reach 10 or 20 liters; usually, however, it ranges between 2 and 5 liters. This is due to the increased quantity of glucose in the blood, which consequently becomes hyperisotonic; the fluids of the tissues are absorbed into the circulation more rapidly than normal, resulting in an increased secretion of water by the kidneys. It is well to remember, however, that in certain cases there may be no increase in the urine, even when glycosuria is present.

The specific gravity as a rule ranges between 1030 and 1050. There is a general idea prevalent that if a urine has a specific gravity of 1020 or under no glucose can be present. I have found glucose in cases in which the specific gravity of the urine varied from 1008 to 1020. And, as Hirschfeld justly points out, in those cases in which the resorption of nitrogenous material from the digestive tract is below normal, the specific gravity is always comparatively low; about 1012.

Of course, the salient feature of the disease is the presence of glucose in the urine. The quantity of glucose varies from mere traces to 8 or 9 per cent. Naunyn reports a case with 11 per cent., and some time ago, at the laboratory of the Jewish Hospital, I examined a urine that contained 12 per cent. of glucose. The severity of the disease cannot be measured by the amount of sugar eliminated. There is a certain class of cases which contain but mere traces of glucose, and yet run a rapid and fatal course.

The total nitrogen of the urine is increased, which is physiologic in diabetes, and caused by the increased quantity of proteid ingested. It becomes pathologic when, in addition, the body albumin is excreted, which occurs with a high sugar output. The greater the nitrogen loss the more the general nutrition suffers by the glycosuria. It is small when the food contains enough albumin and much fat. Great loss in nitrogen is caused by the toxic bodies of coma. For the same reason the urea is also increased.

What is the significance of the increased amount of ammonia present in diabetic urine, and how is it produced? According to Neubauer, the average amount of ammonia excreted by a normal individual on a mixed diet is 0.7 gm. daily. In diabetes, on the other hand, as first pointed out by Hallerworden in 1880, an excretion of 3 to 6 gm. is common; and Stadelman reports a case of a patient who excreted 11 gm. in the twenty-four hours. A high ammonia value means a severe case, and it becomes especially high when coma supervenes. It is an attempt on the part of Nature to protect the native alkalinity of the tissues by neutralizing the acids producing the acid intoxication. The ammonia determination gives an accurate estimation of the acidosis present, and one more easily arrived at than the direct estimation of the acidosis itself.

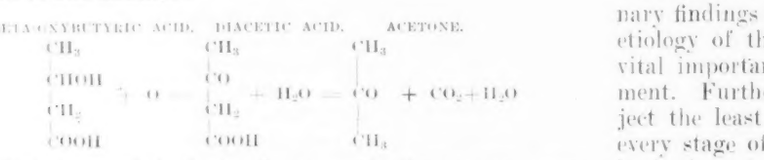
Can we by any urinary findings predict the coming of the dreaded and fatal coma first described by Kussmaul in 1874? Can we predict it sufficiently early to do any good? We can predict the onset of coma with almost mathematical precision and often sufficiently ahead of time to allow the institution of therapeutic measures which may not only prolong life, but even save it.

It is now generally conceded, as proved by Kulz, Minkowski, Walter and Stadelman, that diabetic coma is due to an acid intoxication by one of the acetone bodies, namely, beta-oxybutyric acid, which, circulating in the blood and acting on the respiratory center and the nerve cells of the brain in general, produces the symptoms of diabetic coma. Magnus-Levy, Geelmuyden and others have recently proved that beta-oxybutyric acid and its derivatives, namely, diacetic acid and acetone, originate

1. Henkel, Max: Deutsch. Med. Wchnschr., Nov. 19, 1909.

chiefly from the lower fatty acids of the organism and of the food.

A glance at their structural formulas shows their relation to one another:



It is the carbohydrates that provide the oxygen necessary for complete oxidation of fat into carbon dioxid and water. Deficiency of carbohydrates causes a defective oxidation in the tissues, hence defective fat metabolism, with resulting acetone formation. As a general rule, in mild cases, the addition of moderate amounts of carbohydrates to the diet causes a diminution in the excretion of acetone and beta-oxybutyric acid when present; the withdrawal of carbohydrates causes an increase. In the severest cases there are exceptions. It can be readily seen how important these facts are and what valuable deductions can be made bearing on the regulation of the diet when there are evidences of an acid intoxication in this disease.

Ketonuria, the term applied to the presence of acetone bodies in the urine, is, indeed, a very useful measure of the intensity of the diabetes; thus in the first stage of the disease acetone only occurs; in the second stage both acetone and diacetic acid; and in the third stage all three bodies appear—acetone, diacetic acid and beta-oxybutyric acid. The finding of beta-oxybutyric acid or diacetic acid in the urine, which may be present for days before coma supervenes, should always serve as a danger-signal of its approach. Nor is this the only red flag signaled to us. The increase in the ammonia output previously mentioned is equally important. The sudden marked diminution or complete disappearance of glucose in a urine previously loaded with sugar, the sudden appearance of innumerable granular and hyaline casts, rendering the urine turbid even on voiding, as first pointed out Külz, and the appearance of albumin in a urine previously free from it, have their equal significance of the approaching danger.

Recently the latitude of usefulness for the urinary findings in diabetes has been amply widened by the discovery of Cammidge's crystals, which throw light on the etiology of the disease. Cammidge[2] has succeeded in isolating from the urine hair-like crystals arranged in sheaves, and of the nature of a phenyl glucosazone, whose presence in the urine is due to specific substances circulating in the blood as a result of disturbed functioning of the pancreas, secondary to some pathologic lesion of that organ. Cammidge's findings in 83 specimens of urine from 48 cases of diabetes are of interest. In 36 cases (75 per cent.) there was a positive reaction, suggestive, as he believes, of their pancreatic origin. In 12 cases the reaction was negative. Four of these came to autopsy. In one the pancreas was found to be normal, both macroscopically and microscopically. In two the pancreas was stated to be normal, and in the fourth case the gland was not examined. Recently Kinnicutt[3] reports 7 cases of diabetes occurring in the Presbyterian Hospital; 5, or 71 per cent., gave a positive Cammidge reaction and 2 were negative. This closely corresponds with the results obtained by Cammidge. In the Jewish Hospital laboratory we have had ample proof that a positive Cammidge reaction means that the surgeon will find a diseased pancreas at operation, but we regret to say that we have had no experience with diabetes.

In conclusion, it is evident that as a result of our urinary findings practical deductions can be made as to the etiology of the disease, and that these findings are of vital importance in the diagnosis, prognosis and treatment. Furthermore, to any one who has given the subject the least thought it is self-evident that in almost every stage of diabetes there must have been a mild or beginning stage amenable to treatment; and if more care were taken in the examination of the urine these patients would be saved from the severer forms of the disease, and, in fact, some would undoubtedly have been cured.

NOTE.—In addition to the references previously cited, the following may be found of interest:

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907 St. Marks Avenue.

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A NEW METHOD OF APPENDICOSTOMY

JOSEPH PETTYJOHN, M.D.
Passed Assistant Surgeon, U. S. Public Health and Marine-Hospital Service
SAN FRANCISCO

At the Civil Hospital, Manila, P. I., in May and June, 1907, I operated in three cases of chronic amebic dysentery, using an original method which is, for operative cases, considered an improvement on the modes of operating usually adopted.

The patients had been under treatment by high enemas of quinin solution and other methods, for considerable periods of time, without improvement. The operation was done by the following method:

MODE OF OPERATION

An incision three inches in length is made, directed downward, parallel with the fibers of the rectus muscle and about three-fourths of an inch internal to its outer border, beginning at a point half an inch below the level of the umbilicus. The superficial structures over the rectus muscle are divided in the same line, thoroughly exposing the rectus and retracting it toward the median line, after which incision is made into the abdomen through the tissues posterior. The fingers are introduced to determine the point of origin of the appendix. Over this point a vertical stab wound is made through the abdominal wall, using a small straight bistoury one-fourth of an inch wide. While making this incision, the intestines must be protected by a thick pad of gauze held on the inner surface of the abdominal wall at the proper place. In cases in which the meso-appendix is too short or too narrow to permit the appendix to be drawn out of the abdomen, it should be clipped on the free edge at a point well toward its termination in order not to interfere with the blood-supply of that portion of it which is

to form the canal. A pair of narrow forceps is thrust through the stab incision, grasping the appendix and drawing it out until the intestine is in contact with the abdominal wall, after which it is held in place with several interrupted sutures at the opening in the skin. The large wound is closed with three layers of sutures and sealed with collodion or tincture of benzoin. The appendix is then removed at a point one-fourth of an inch beyond the skin, and a catheter inserted into the canal at once in order to keep it patent. Considerable swelling in its walls always occurs, and it is much easier to open the appendix and introduce the catheter immediately than to wait.

ADVANTAGES

1. This method is much cleaner than the operation of sewing the appendix in the large wound, for this can be sutured completely and sealed, leaving no port of entry for infection and rendering it possible to do a thoroughly aseptic operation.

2. The necessary irrigation with quinin solution can be begun at once. The appendix is in close contact with the tissues in its exit and the wound is very small, so that the peritoneal surface unites with these tissues almost immediately and it is not necessary to wait for complete union.

3. This operation completely removes the possible danger of secondary hernia following an operation in which the appendix is sewed in a large abdominal wound. The appendix emerges from the abdominal cavity by an opening too small to admit of such a possibility.

4. In the operation as done ordinarily, it is impracticable in many cases to make the incision over the exact site of the origin of the appendix, because there is much individual variation in different cases and it is extremely hard to determine its exact location. In such cases this point may be at some little distance from the line of the wound, resulting in a tortuous canal or one perhaps requiring considerable stretching of the appendix to bring it to the surface. Such a result is most reprehensible and may cause stopping of the blood-supply with a resultant sloughing of the appendix. In the new method the stab wound is made directly over its origin, after examination and results in a short straight canal, opening directly into the bowel.

5. The secondary operation for the repair of the sinus after the patient has recovered under treatment is much simpler than in former methods. Only a very small amount of scar tissue is formed in such a wound and the appendix can be easily dissected out and removed.

THE SOLUTION USED

The solution in most general use in the treatment of amebic infections, both for appendicostal and for rectal injection, is a simple solution of quinin sulphate in warm sterile water, the treatment beginning with half a liter of a weak solution. Injections are given daily and both the quantity of fluid and its percentage of strength in quinin is increased each day, covering a period of several weeks or more and until it is being taken in large quantities. After the operation of appendicostomy, the entire bowel can be irrigated continuously with the solution for long periods of time, and the results of treatment are not altered when large quantities of the ordinary solution are not retained. The ordinary solution is distinctly an irritant to the bowel, and in some cases it can be retained in only comparatively limited quantities for rather short time. In the after-treatment of the three patients operated on, it was found that the use of a physiologic salt solution at a temperature of 39 C. as a menstruum for the administration of the quinin was followed by complete alleviation of the irritating symptoms. It is superior to the ordinary solution; it is more penetrating in action against the ameba and hastens recovery. The ordinary solution of quinin is not an isotonic fluid, and it is possibly for this reason that it causes more or less irritation to the mucous membrane of the bowel, resulting in cramps and griping when any considerable quantity is retained. The addition of sodium chlorid in proper percentage always relieves the irritation completely, so that the patient is able to retain large quantities.

In cases of amebic infection which are not considered suitable for operation, but in which treatment by high enemas in the knee-chest position is administered, the use of physiologic salt solution is particularly effective because it is necessary to inject the fluid in a direction reverse to the normal peristalsis, and this is difficult if the fluid is an irritant. For a cure in such cases it is necessary to inject large quantities so that it may fill the colon and reach the seat of the disease in the cecum. When saline solution is used, such patients are able to retain very large quantities containing a greater percentage of quinin for a longer period of time. The amount of the solution taken is often doubled. At my suggestion this treatment was used with most excellent results in a number of cases of amebic infection under the treatment of Dr. J. D. Long at the Marine Hospital, San Francisco.

INDICATIONS

It is believed that the operation of appendicostomy should be reserved for those cases of amebic infection in which prolonged treatment by enemas per rectum has been ineffectual. Most cases of chronic dysentery and other forms of amebic infection in the Philippines are perfectly amenable to treatment with high enemas of quinin solution, but in a certain percentage it fails; possibly the solution does not get sufficiently high up to reach the seat of the disease.

The three patients operated on were discharged in a few weeks, recovered, and with no amebas in the stools.

BLINDNESS FROM HEROIN IN THE NOSTRUM "HABITINA" *

EDWARD STIEREN, M.D.
PITTSBURG

It is well known that certain agents, when ingested in large quantities, or for a considerable length of time, cause an amblyopia which is due either to an acute interstitial inflammation of the central or macular nerve fibers of the optic nerves or a gradual degeneration of these fibers. Wood alcohol or some preparation containing it, Jamaica ginger, etc., are the agents more prone to cause the acute variety, while the habitual excessive use of tobacco and alcoholic beverages, the administration of stramonium, cannabis indica, chloral, etc., or long continued exposure to lead, bisulphid of carbon, naphthalin, etc., are frequently responsible for the chronic form.

That the heroin amblyopia vaguely referred to in various works on therapeutics and pharmacy belongs to

* Read before the Allegheney County (Pa.) Medical Society, Jan. 18, 1910.

* The nostrum is discussed editorially and in the Pharmacology Department in this issue.

the category of retrobulbar neuritis is evident from the following clinical history and ophthalmic findings:

History.—Mrs. M. P., aged 32, colored, married, was admitted to the Passavant Hospital, Nov. 6, 1908, in the service of Dr. Karl Emmerling, complaining of dimness of vision and pain in the head, shoulders, and abdomen. Her past history is unimportant. She frankly confesses to the morphin habit, which she states was contracted during an attack of enteritis about two years before. The patient is above the average in education and refinement for one of her race and there is no doubt that she is sincere in her expressed desire to throw off her drug habit, innocently contracted. To this end she had been taking for a month prior to her admission to the hospital, a preparation called "Habitina," beginning with ten drops four or five times daily and gradually increasing until she was now taking a teaspoonful six or eight times daily. Before beginning the "cure" she had been using about 6 grains of morphin daily. Her mental aberration and apathy were marked.

Examination.—The ophthalmic picture she presented was striking and characteristic of blindness; the pupils were widely dilated and reacted sluggishly to light and accommodation; either eye diverged markedly on covering. The subjective symptoms were diplopia and failure to recognize objects when looking directly at them; a large central scotoma could be demonstrated in each eye, with peripheral vision apparently but little diminished. The ophthalmoscope revealed a slight hyperemia of the discs, edges blurred, and decided fulness of the retinal veins.

Treatment.—Treatment was mainly eliminative and supporting. Some hypnotics had to be given and also an occasional dose of morphin during the first week. Caffein in one grain doses every four hours undoubtedly did much good toward clearing up her clouded intellect. Discharged Dec. 8, 1908, with vision 6/8 in either eye. She was seen several times during the ensuing summer by the intern who had her in charge, Dr. F. B. Shaffer, and declared to him she had no return of her craving for opium and felt in the best of health.

Two samples of the nostrum she had been taking were obtained for analysis. One, a small sample, had been sent to the patient's mother; the other, a two-ounce bottle, was readily purchased from a Market Street drug store. Each of these bottles had labels on which was printed the following statement: "This preparation contains 1 per cent. alcohol. One fluid ounce contains 16 grains morphin sulphate, 8 grains diacetyl-morphin hydrochlorid." Both of these samples were subjected to analysis by Dr. Julius Koch, who determined the alcohol contained to be ethyl alcohol and that the proportion of morphin sulphate and heroin hydrochlorid coincided with the formula printed on the containers. No other drugs or poisons could be demonstrated in the specimens nor did any new combinations form.

This patient had, then, before contracting the "Habitina" habit, been taking about 6 grains of morphin per day. Beginning with ten drops of the "cure," or 1/3 of a grain of morphin and 1/6 of a grain of heroin, four or five times daily, the doses increased in direct proportion with her desire for the "cure" until she eventually was taking, when admitted to the hospital, 2 grains of morphin and 1 grain of heroin six or eight times daily!

Heroin is not a true alkaloid of opium. It is chemically obtained by heating pure morphin alkaloid with acetyl-chlorid, washing with water, then with dilute solution of sodium carbonate and, finally, purifying by crystallization from hot alcohol, the product being diacetyl-morphin or heroin. It is an unstable compound and appears to be susceptible to chemical changes when kept for any length of time, causing untoward symptoms when thus dispensed. Hare mentions nausea and vomiting as the least of these, syncope, blindness, subnormal temperature, even death following the use of large doses.

Its chief depressing action is on the respiration, which becomes deeper and slower in small doses and may cause complete cessation of respiration in larger doses. As a cough sedative it finds its most general use, although it has been used in place of morphin for the relief of pain. In this respect it certainly is much less efficient than morphin and infinitely more dangerous if enough be given to control the pain.

The doses commonly recommended, from 1/10 to 1/3 gr. are entirely too large for general use; 1/24 gr. is usually sufficient for the relief of cough.

Consideration of the above report appears to emphasize the necessity of prohibiting by law the advertising and sale to the public of preparations containing opium. It is obvious that merely to require the publishing of the different ingredients contained in a nostrum in many instances serves only further to promote its sale.

3503 Fifth Avenue.

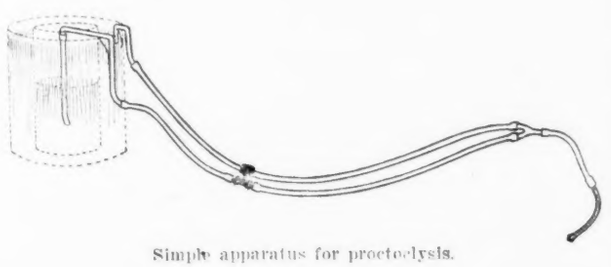
A SATISFACTORY, INEXPENSIVE AND PORTABLE PROCTOCLYSIS APPARATUS

EDMUND ADAM BABLER, M.D.

Assistant Surgeon, Deaconess Hospital; Associate in Surgery, Washington University; Chief Medical Director, International Life Insurance Company

ST. LOUIS

The internist, as well as the surgeon, acknowledges the great value of Murphy's method of saline proctoclysis. Every surgeon of wide experience has been repeatedly brought face to face with the fact that the present methods of introducing warm salt solution, drop by drop, into the rectum are usually unsuccessful. In more than 90 per cent. of the cases either the solution is cold by the time it reaches the rectum or the apparatus is expensive, clumsy or otherwise unsatisfactory. A visit to the various hospitals in our American cities will reveal the fact that the fountain syringe continues to be relied



Simple apparatus for proctoclysis.

on for this purpose, and all know the unsatisfactory results that must follow.

The most serious objection to the Elbrecht apparatus is its expensiveness. Hospitals usually limit their purchases to one apparatus. That designed by Saxon of Philadelphia is not conveniently portable. Having frequently been compelled to treat these cases of acute perforative peritonitis in the farm house, the necessity of an efficient, satisfactory and portable apparatus for saline proctoclysis was the mother of the device herewith presented.

The principal objection to the apparatus is its simplicity. The illustration is self-explanatory. The two arms of the Y are especially long and the stem of the Y is very short in order that the flatus may be expelled through the overflow arm with the greatest ease. This is a very valuable point. The siphon tube and the over-

flow tube are so made that they can be attached to a douche can, the outlet of which has been plugged with a cork. If the can is placed on an electric stove (in hospital practice) the results are ideal. In private city homes where an electric stove is not at hand, or in the farm house where the surgeon has the proctoclysis apparatus only, the same results can be obtained by placing the saline solution in a quart fruit jar or other receptacle and then placing the latter in a bucket, kettle or other vessel partially filled with hot water. The siphon and overflow tubes are then attached to the latter vessel and the flow regulated by the stop-cock in the siphon arm of the Y. The vessel containing the salt solution should be placed near the side of the bed of the patient, and less than a foot higher than the buttocks of the patient. The flow must not be faster than a drop a second.

The apparatus has been in use at the Deaconess Hospital, St. Louis, for some time and has been found ideal. By removing the overflow arm of the apparatus and attaching the piece of rubber hose on the siphon tube to the nose of the overflow tube it is possible to employ this apparatus successfully for hypodermoclysis.

4826 Delmar Avenue.

THE ELIMINATION OF HEXAMETHYLENAMIN BY THE MUCOUS MEMBRANE OF THE MIDDLE EAR

A PRELIMINARY NOTE: POSSIBLE APPLICATION TO THE TREATMENT OF OTITIS MEDIA

WILFRED M. BARTON, M.D.

Professor of Pharmacology and Therapeutics in the Medical Department of Georgetown University

WASHINGTON, D. C.

It has been known since the introduction of hexamethylenamin by Nicolaier, that the drug is eliminated in the urine partly as formaldehyd and partly unchanged, and since that time hexamethylenamin has been extensively employed as a genito-urinary antiseptic.

The discovery that it is eliminated in large amounts in the bile and cerebrospinal fluid, and that these fluids may be rendered sterile by it, we owe to Crowe, of Johns Hopkins. Many important therapeutic applications were suggested by Crowe, and based on these facts the drug has rightly assumed a position of great importance in the treatment of different pathologic states involving the biliary and meningeal tracts.

So far as I am aware, however, and so far as a cursory examination of the literature has enabled me to learn, no one has ever noted that hexamethylenamin is eliminated by the mucous membrane of the middle ear and that it can be demonstrated in the secretions from this organ.

Having recently determined this fact, it was considered sufficiently important to report the circumstance by which the discovery was made because it would seem probable that some useful therapeutic applications may result from it.

History.—J. R. B., a student in the medical department of Georgetown University, developed an acute sinistral otitis media, Jan. 24, 1910, after two days of malaise, pain in left side of face and nasal discharge from left side. When I first saw him, January 25, the mucous membrane of the auditory meatus was bleeding as a result of efforts made to remove a piece of cotton which was supposed to have passed into the canal. No cotton was present on examination. The drum-membrane was inflamed. The only treatment employed was the introduction of a simple emollient after cleaning out the canal, and applying a cocain-adrenalin solution. His temperature was 101 and he felt ill, and suffered considerable pain in the ear. January 26, at 10 p. m., the membrane ruptured and a free muco-purulent discharge appeared. January 27 a microscopic examination showed the pus to contain a capsulated diplococcus morphologically identical with the pneumococcus. He was directed to irrigate the external meatus with hot boracic acid solution, and to keep the ear lightly plugged with sterile cotton. He was seen on January 28 by Dr. Walter A. Wells, professor of otorhinology in the medical school, who examined the ear and advised a continuation of the treatment. The discharge was profuse and kept up unabated from January 27 to February 2 and continued to contain the *Diplococcus pneumoniæ*.

February 2 it occurred to me to determine whether hexamethylenamin (urotropin) would be eliminated in the secretion after internal administration, and if so determine what effect, if any, such elimination would have on the discharge. With this end in view the patient took 1 gram (15 grs.) of hexamethylenamin in divided doses of 0.3 gm. (5 grs.) during the evening of the second and early morning of the third. I saw him at 2 p. m. February 3 and found that the discharge had decreased in amount, roughly speaking, about 75 per cent.

He removed a piece of cotton which had been in the meatus all the morning, and this contained but a comparatively small amount of secretion. The cotton was triturated in a test tube with 3 or 4 c.c. of water and the solution tested according to the method used by Crowe in his investigations on cerebrospinal fluid. A drop of milk was added and the reagent, consisting of 100 c.c. of 96 per cent. sulphuric acid and one drop of 3 per cent. ferric chlorid solution, was poured to the bottom of the tube. At the line of juncture a deep amethyst color appeared, soon turning dark, showing the presence of a considerable amount of the drug. Another experiment was tried with the secretion which could be swabbed in a small amount from the meatus, representing discharge which had just emerged from the tympanum. The reaction was present but to a less degree.

The drug was a second time administered: 1 gram (15 grs.) in divided doses during the evening of February 3 and the morning of February 4, the last dose, 0.3 gm. (5 grs.), being taken at 7 a.m. A piece of cotton was kept in the meatus during the night. This cotton was treated in the same manner as on the previous day, and a positive reaction obtained. The color reaction appeared more slowly than on the previous day. The amount of discharge was extremely scanty and only a few pneumococci were found. On the evening of February 4 no discharge could be obtained.

It would appear therefore that hexamethylenamin is eliminated in the secretion of the middle ear, and that possibly it may be found to be of value in the treatment of otitis media. Certainly the case above reported of pneumococcus infection appeared to be rapidly cured by it. Whether other forms of purulent middle ear disease will be equally amenable to such treatment will remain for future investigations to decide.

1338 H Street, N. W.

Drop-Wrist Sign of Organic Central Paralysis.—J. M. Raimiste calls attention in the *Revue Neurologique* to a sign that differentiates organic central paralysis of the arm. The patient rests his forearm in pronation on a table beside him, and the examiner gradually raises this forearm, using both hands but very lightly, without pressure, until the forearm is vertical, the elbow still resting on the table. The patient's attention is then diverted and the examiner gently withdraws his supporting hands. The hand, the palm turned inward and forearm form a straight vertical line and thus remain in the healthy, but in case of cerebral paralysis the hand drops when the support is removed, forming an angle of 130 or 140 degrees with the forearm.

POST-OPERATIVE HEMATEMESIS WITH REPORT OF A CASE

G. E. POTTER, M.D.
DETROIT

Among the grave post-operative complications that may befall a surgical patient is hemorrhage from the mucosa of the stomach. The condition known as post-operative hematemesis does not include secondary hemorrhage from the stomach due to poor surgical technic or to gross pathologic lesions located within the stomach wall, or the vomiting of blood swallowed during operation. Post-operative hematemesis follows far more frequently on operations on the abdominal viscera, especially when the stomach, duodenum or bile passages are the organs operated on, though cases of fatal hematemesis have occurred after operations on the head, genito-urinary tract and extremities.

The hematemesis usually begins within twenty-four hours following the operation, though cases are recorded in which it occurred as late as the tenth day. The patient may or may not have suffered from ether or chloroform sickness, but whether he has or not, there is usually an interval between the cessation of the anesthetic sickness and the commencement of the vomiting of blood. As a rule, the amount vomited at first is small, and occurs at intervals of one to two hours. There is rarely more than 60 c.c. to 300 c. c. at a time. The blood which is vomited has always been in the stomach a sufficient length of time to become partly digested, giving the vomit a black, coffee-ground appearance. The vomitus is intensely acid, and burns the patient's throat, mouth and lips, leaving a red streak where it trickles over the lip and chin.

The general condition of the patient soon changes from one of mental alertness and sensitiveness in the early stage, to that of profound depression. The pulse is small and rapid, the skin cold and clammy with sweat, temperature is often sub-normal. There is, as a rule, a progressive asthenia and collapse. The vomiting tends to become regurgitant at short intervals.

Patient.—M. L., aged 48 years, commission merchant, married, weight 196 pounds, height 5 feet 9 inches.

Family History.—Father died of cerebral apoplexy at 58 years. Mother had right hemiplegia at 62 years, died at 71 years of senility. One brother is living and well.

Previous History.—Patient had ordinary diseases of childhood; denies syphilis; does not use liquor or tobacco; enjoyed perfect health until 42 years of age, when he had a light sunstroke; complained of headache at times. Since that time, he has complained, for a few days at a time, of attacks of sour stomach and pain in epigastrium, after eating.

History of Injury.—April 25, 1904, while attempting to stop a runaway team he was crushed between the wagon and a telephone pole; when released he was suffering great pain in right side of chest, and on examination it was easy to determine that the fifth, sixth and seventh ribs on the right side were fractured in the mid-axillary line, for the relief of which the right side from axilla to costal margin was strapped with adhesive plaster. The patient, removed to his home and placed in bed, rested comfortably; had very little pain in chest, no cough. Temperature varied between normal and 100 F. for first four days; pulse never above 100. Second day following accident the patient complained of continuous dull pain in lower portion of right upper quadrant of the abdomen. Ice-bag was applied but gave no relief; there was some tympanites, bowels moved but condition was not improved.

April 29. Fourth day following accident at 2 a. m. patient was suddenly seized with intense pain in right upper abdomen; there was tenderness on pressure and muscular rigidity extended over right half of abdomen; the intestines soon became greatly distended with gas. Temperature registered 101, pulse 120, respiration 30. At 7 a. m. there was no cough, no increase of pain in chest, no discernible physical sign of pneumonia; the respiratory murmur on right side was diminished, and percussion note slightly dull; no exploratory puncture was made. Patient was moved to hospital and in consultation a probable diagnosis of perforation of a traumatic gangrenous intestine was made, and exploratory incision advised.

Operation.—The patient was operated on at 4 p. m. On entering abdominal cavity the intestine, much distended with gas, protruded into the wound. No peritonitis, adhesions or perforations were found. The entire abdominal viscera appeared free from any inflammatory condition; wound was closed. The patient vomited twice during the night; about 60 c.c. of bile-stained mucus and complained of some pain in right side of chest.

April 30. Temperature 102, pulse 130, respiration 34, cough. At 4 p. m. he vomited 90 c.c. of dark blood-stained material, which he continued to do during the night about every two hours. The following day he continued to vomit more frequently of the coffee-ground material, varying in amount from 60 c.c. to 300 c.c. at intervals of 30 to 40 minutes. Temperature 102, pulse 150.

May 2. Patient in collapse. Temperature 102, pulse 160; vomiting pus; basin full of dark blood every 15 to 20 minutes. The man died at 2 p. m., 46 hours from time hematemesis began.

Autopsy.—The autopsy was held two hours after death. Abdomen greatly distended; median incision found healing by first intention, with the omentum slightly adherent to the peritoneal incision. The entire intestinal canal was enormously distended with gas. No obstruction, no arteriomesenteric ileus. The omentum was of good color, not twisted, did not exhibit any evidence of traumatism. The abdominal cavity was free from fluid, no peritonitis. The liver, kidney, spleen, heart and pancreas were normal.

The right pleural cavity contained 75 c.c. of blood-stained serum. The lower half of the parietal and visceral surfaces of the cavity was in an acute stage of inflammation. The surface of the lower lobe of right lung opposite the points of fractured ribs was abraded in several places, and in the stage of red hepatization; left lung and pleural cavity normal.

The most important pathologic condition was that observed in the stomach. The organ, normal in size and position, contained when removed about 100 c.c. of thin, black blood; its walls were flabby; the blood-vessels leading to and penetrating the walls were engorged; the mucosa was extravasated with blood in places, and over the whole surface were ulcerative patches varying in size from a pin point to a bean. In outline some were circular, some slender, almost linear; in general they were more nearly oval, and more numerous toward the pyloric end of the stomach. The ulcers were shallow and did not extend into the submucosa.

INTERPRETATION OF THE SYMPTOM-COMPLEX AND POST-MORTEM FINDINGS

It probably has been observed by most of us that in some cases signs are either exaggerated, meager, absent or contradictory when viewed in the light of later developments of the case, or when compared with post-mortem findings. It happened in this case that the physical examination of the chest failed to disclose early in the history the nature and seat of the disease in the lung and pleura. There was a transference of the usual chest symptoms to the abdomen and an abeyance of the physical signs in the chest, as the patient was carefully examined. The sudden acute exaggeration of the abdominal symptoms on the fourth day following the accident was due to a right-sided traumatic pleural pneumonia. The explanation of the transference of pain to the abdomen in thoracic disease is clear when we recall the anatomical distribution of the anterior rami of the six lower intercostal nerves in the abdominal wall and parietal peritoneum as described by Ramstorm.

The post-operative vomiting of blood is best explained by the theory of sepsis as suggested by W. L. Rodman. The hemorrhage was from ulcers found in the gastric mucosa which were apparently of recent formation, and the multiple foci had their origin without a doubt in the infected lung and pleura. The question is whether emboli carried the infection to the gastric mucosa, or whether the infectious organisms alone were transported to and produced thrombi with subsequent emboli in the vessels of the stomach. Death in this case was due to hemorrhage from numerous acute ulcers of the gastric mucosa.

PROGNOSIS

The mortality of post-operative hematemesis is high. In a series of 29 cases reviewed by Purves,[1] the death-rate was 69 per cent. In 14 cases reported by Busse the mortality was only 21 per cent.

TREATMENT

The treatment can be conducted only along symptomatic lines, as the bleeding is from numerous erosions for which the primary operation is mainly responsible. The stomach should be washed out with a 2 per cent. solution of sodium bicarbonate, at a temperature of 100° F. to 120° F. until the fluid returns clear; to be followed by 2 c.c. of adrenalin chlorid (1 to 1,000) solution in 60 c.c. of water or normal saline solution. No food is given by mouth; rectal feeding is used. Ice-bag to epigastrium, a 2 per cent. gelatin solution, subcutaneously, or a 10 per cent. solution, by rectum, have proved useful. It is essential that the patient be kept as quiet as possible.

1491 Woodward Avenue.

CARCINOMA OF THE STOMACH

TWO CASES DIAGNOSTICATED BY THE X-RAY

SIDNEY LANGE, M.D.
CINCINNATI

The comparative meagerness of the literature on the Roentgen diagnosis of carcinoma ventriculi prompts the report of the following cases:

CASE 1.—Mrs. E. F., aged 45, was admitted to the east surgical service of the Cincinnati Hospital because of pain in the upper abdomen and persistent vomiting. The onset of the symptoms dated back only three months, during which time she had lost much weight.

Examination.—The essential physical findings were as follows: A somewhat tender rounded tumor mass about the size of a peach could be felt in the abdomen. Its position varied, at times being found in the upper left quadrant or epigastrium; at other times at or below the umbilicus. It was freely movable, transmitted an impulse from the aorta and descended with inspiration. The vomiting was very persistent and followed the ingestion of even the blandest of foods. Examination of the stomach contents revealed some diminution of the hydrochloric acid and the presence of much stringy mucus, but no lactic acid, blood or tissue shreds were found. A provisional diagnosis of cancer of the stomach was made because of the progressive emaciation, persistent vomiting and the tumor mass. But a positive Moro skin reaction together with the great mobility of the tumor and the negative stomach analysis suggested the possibility of an omental tumor of tubercular origin.

An *x*-ray examination of the stomach after the ingestion of 12 ounces of bismuth subcarbonate suspension revealed a vertical sac which extended two inches below the umbilicus. This represented apparently the vertical or cardiac portion of the stomach. The horizontal or pyloric portion of the stomach was absent. The lower extremity of the vertical sac, instead of being continued into the pyloric spout, ended abruptly with a median serrated margin. After a wait of one-half hour the same skiagraphic appearance persisted, the pyloric portion of the stomach failing to fill with the bismuth suspension although from the shape of the stomach it was evident that the organ was undergoing vigorous peristalsis. The stomach was apparently prolapsed but not dilated.

The accompanying tracing from the skiagram (Fig. 1) shows the above described condition, which becomes more evident by a comparison with the tracing of a prolapsed but otherwise normal stomach (Fig. 2) in which the pyloric spout is especially well marked. An *x*-ray diagnosis of organic obstruction in the pyloric portion of the stomach was made, which obstruction in the presence of the tumor mass was interpreted as carcinoma.

Operation.—After two weeks of observation surgical intervention was recommended and accepted. At the operation a hard mass was found in the pyloric portion of the stomach, infiltrating the walls in circular fashion. The gastric mucosa was not ulcerated (which accounted for the absence of blood in the vomitus) and the pyloric canal was still patent to fluids. The mass was resected and a gastroenterostomy performed. The resected specimen was sent to the laboratory where the diagnosis of carcinoma was substantiated.

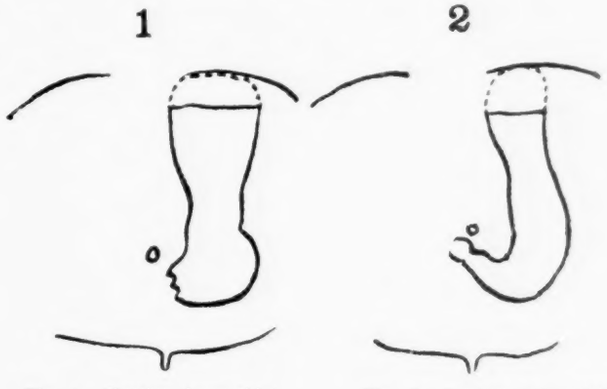


Fig. 1.—Tracing from skiagram showing apparent absence of pyloric portion of stomach.

Fig. 2.—Tracing from skiagram of prolapsed but otherwise normal stomach, showing pyloric portion.

CASE 2.—J. M., aged 65, was admitted to the east medical service of the Cincinnati Hospital because of pain in the stomach, occasional vomiting, loss of appetite and weakness. These symptoms began seven weeks before admission.

The pain which was referred to the epigastrium was dull, aching in character and was accentuated by pressure over this region. The patient was often nauseated and vomited once on average of twice a week.

Examination.—Analysis of the stomach contents revealed an absence of free hydrochloric acid. There was, however, no lactic acid or blood to be found. Physical examination proved entirely negative except for a slight tenderness in the epigastrium. There was no tumor mass to be felt.

An *x*-ray examination of the bismuth-filled stomach gave a skiagram almost identical with the one in the previous case. The vertical cardiac portion of the stomach was clearly outlined but the horizontal pyloric portion could not be seen. That there was no complete obstruction in the pyloric portion of the stomach was evidenced by the fact that the bismuth emulsion slowly escaped from the stomach, but the thick material could not enter the pyloric passageway in sufficient quantity to be skiagraphed. The contour of the stomach indicated active peristalsis.

Diagnosis.—A diagnosis of carcinoma of the pyloric portion of the stomach was made and an operation advised. The patient refused to be operated on and left the hospital.

On tracing the subsequent history of the patient it was learned that he died some six months after leaving the hospital with every evidence of cancer of the stomach.

1 Edinburgh Med. Jour., March, 1902.

We have here two cases of carcinoma ventriculi which gave distinct skiagraphic evidence of their presence. That the diagnoses were not early ones is of course evident, and there were, moreover, in both cases clinical signs pointing to the possible nature of the condition. In the first case, however, the *x*-ray findings served to clinch the diagnosis while in the second case the diagnosis practically rested on the *x*-ray examination.

That the *x*-ray will be an important and not infrequently a determining factor in the early recognition of carcinoma ventriculi seems fairly certain. The fact that there is no early, constant and positive clinical sign of this condition gives the *x*-ray method much latitude.

22 West Seventh Street.

EXTRA-UTERINE PREGNANCY

JAMES L. CAMPBELL, M.D.

Professor of Surgical Anatomy and Clinical Surgery, Atlanta School of Medicine; Visiting Surgeon to Wesley Memorial Hospital and Tabernacle Infirmary

ATLANTA, GA.

This case is of especial interest as the right tube and ovary had previously been removed. The ovum found lodgment and had developed in the uterine portion of the stump.

History.—Mrs. J. C. O., aged 30, married ten years, had one child 2½ years old. The right Fallopian tube and ovary were removed six years ago. Since that time her health has been good. September 10 last she missed her period but felt continually as if "about to menstruate." November 1 she was taken suddenly with an acute pain in the lower abdomen accompanied by diarrhea, nausea and vomiting. The next day she was better, but had a sore spot and a lump the size of a hen's egg below and to the right of the umbilicus. The physician who attended her paid no attention to it, as he thought it would pass off in a few days. During the evening of November 9 a second, but much more severe, attack came on. Dr. Austin of Charlotte, N. C., was visiting next door, and gave temporary relief. I was called two and a half hours after the attack began. The patient was in a state of profound collapse when I arrived. The abdomen was distended and the lower third dull on percussion. Dr. Austin agreed with me that an operation was imperative, so the patient was hurried to the Tabernacle Infirmary.

Operation.—The peritoneal cavity contained about five pints of fluid and clotted blood. There was a ragged opening three inches long at the right cornu of the uterus. A two-and-a-half-months fetus enclosed in the amniotic sac was found in the cul de sac of Douglas. There were no adhesions about the uterus or broad ligaments from the former operation. The left tube and ovary were healthy. The entire right broad ligament and the body of the uterus were removed and the stump stitched over with No. 1 plain catgut, the peritoneal cavity cleaned out, filled with hot saline solution and closed without drainage.

The patient has made an uneventful recovery.

Examination of Specimen.—There was a cavity the size of a small turkey egg at the right cornu, extending into the uterine wall as deep as the mucous membrane, and outward between the folds of the broad ligament. It communicated with the cavity of the uterus by means of the orifice of the right Fallopian tube. There were fragments of the placenta attached to the uterine portion of the cavity. There were a number of half-organized blood-clots between the folds of the broad ligament. These were evidently the result of the partial rupture of November 1. The present rupture occurred along the superior and posterior walls, the anterior and inferior walls remaining intact. The cavity of the uterus was filled with decidua which was protruding through the orifice of the tube.

834 Candler Building

CONGENITAL ABSENCE OF THE RECTUM

W. S. JOHNSON, M.D.

LOS ANGELES

History.—Male child, born Nov. 22, 1909. The mother had previously given birth to two children normal in every respect and both living. The weight of child at birth was 9 pounds. It was a fine, healthy-looking baby, but examination of the perineum revealed entire absence of the anus. A median raphé extended from scrotum to coccyx without so much as a dimple to indicate the usual location of the anus. There was no bulging of the perineum. The external genitals were normal and well developed.

Operation.—November 23, at 10 p. m., forty-two hours after birth. Under light ether anesthesia an incision was made in median line of the perineum. No muscle tissue was encountered. The dissection was carried inward through fibrous tissue to a depth of two inches and careful search was made from the urethra anteriorly to the sacrum behind, but there was no evidence of gut. The perineal wound was closed with catgut and after rapid preparation of the abdomen an incision was made in the left iliac region. A loop of sigmoid was exposed and sutured in the wound. The bowel was immediately opened by a longitudinal incision and a small amount of meconium was delivered. A gauze dressing was applied and the baby put to bed.

Result.—The child bore the operation well and required no stimulation. Within a few hours large quantities of meconium were passed. Twelve hours after operation the child nursed from the breast, and the subsequent convalescence was uneventful. On Jan. 10, 1910, the child weighed 12 pounds, a gain of three pounds in seven weeks.

717 Grant building.

Therapeutics

LACTIC ACID MEDICATION

During recent years much has been written about autotoxemia, and especially that form of this condition which is believed to be due to intestinal putrefaction.[1] This intestinal putrefaction is caused by, or at least accompanied by, the growth and multiplication of microorganisms. Two important varieties of this putrefaction are recognized and are distinguished as proteolytic, due to the putrefaction of proteids, and saccharolytic, due to the putrefaction of sugar.

It has been proposed to combat or prevent this putrefaction in three different ways: first, by regulating the diet so that the food ingested will be thoroughly digested and completely absorbed, and that consequently little material will be left for the putrefactive bacteria to work on; second, by administering drugs which will inhibit or prevent the growth of the putrefactive bacteria; and, third, to inhibit or prevent their growth by introducing into the alimentary canal, and encouraging the multiplication therein, of bacteria which are inimical to the other putrefactive bacteria already at work.

Up to the present the bacteria which give promise of proving most useful in preventing the development of the putrefactive bacteria in the intestinal canal are the lactic-acid-producing bacilli.

Lactic acid is described in the Pharmacopeia of 1900 (page 16) as "a liquid organic acid, composed of not less than 75 per cent., by weight, of absolute lactic acid . . . and about 25 per cent. of water, a colorless, syrupy liquid, odorless, of a purely acid taste, and absorbing moisture on exposure to damp air." The

1. Among other articles which may be referred to on this subject is one by Dr. C. A. Herter, in THE JOURNAL, Dec. 21, 1907, p. 2079.

Pharmacopeia of 1890 (page 16) contains the additional information that it is "usually obtained by subjecting milk sugar or grape sugar to lactic fermentation."

The bacilli of lactic acid fermentation, which cause the production of lactic acid in milk, are "bacilli which convert milk sugar into lactic acid. Several have this property, including *Bacillus acidi lactici, Bacillus prodigiosus, Bacillus caucasicus, Bacillus oxytocus perniciosus* and others" (Foster). *Bacillus acidi lactici* is, therefore, it is evident, "a term applicable to a number of bacilli which give rise to the lactic-acid fermentation in milk" (Foster).

Milk when allowed to stand undergoes two marked changes: first, the fatty matter, with a small part of the casein attached to or entangled with it, rises to the surface in the form of cream; second, if the milk is exposed to the air and the temperature is warm, lactic-acid fermentation takes place, which results in the milk becoming sour, and later, the casein coagulating, the milk becomes curdled. The curd consists chiefly of coagulated casein, and the liquid part consists of the watery portion of the milk with the salts and any milk sugar not changed into lactic acid.

When cream which has become sour is churned it separates into two parts, a hard part consisting chiefly of the fatty part of the milk, and a liquid part containing casein, in a sour liquid containing lactic acid. The latter, the sour liquid containing casein and lactic acid, is buttermilk. The casein in buttermilk is in a finely coagulated form and is more readily digested than ordinary casein.

Forty years ago Dr. Ballot, of Rotterdam (*Medical Times and Gazette,* 1870, vol. i, p. 331; see Bartholow) recommended the use of buttermilk as a food for infants on the ground that it was more easily digested than milk. Since then it has been considerably used, not only in the feeding of infants, but also in stomach diseases, in albuminuria, and in diabetes. In recent years it has been in considerable demand and has been furnished by milk dealers to customers who demanded it, and by the glass in many restaurants, and at lunch counters and soda fountains. The demand has become so great that various products of the dairy have been sold under the name of buttermilk.

H. G. Piffard, of New York, who contributed "A Study of Sour Milks" to the *New York Medical Journal,* Jan. 4, 1908, says that he has not been able to find any buttermilk throughout the whole Island of Manhattan; referring, he explains, "to the old-fashioned country buttermilk obtained when sour cream is churned." He learned from an officer of the company that the buttermilk sold by one of the large distributing concerns in New York is obtained in the following way: "The fresh milk, after cooling, is put through a separator, and the cream comes down to the city for distribution to our patrons. This leaves the skimmed milk on our hands. The health board will not permit us to bring sweet skimmed milk into the city, so the man at our skimming station puts in a starter in order to sour it as quickly as possible, and when sufficiently soured it is brought to the city. Here we mix it with some whole milk, churn it, and after removal of the butter it is ready for distribution." This is probably a fair description of the better class of buttermilk of commerce.

Buttermilk is one of the varieties of sour milk, and the one most commonly used in this country. Among other preparations of milk, made by the action of the lactic-acid-producing bacteria and containing lactic acid, is kumiss or kumyss, introduced to the profession of New York about thirty years ago by Dr. E. F. Brush. This beverage originated among the Kirghis tribes and the Tartars who live on the vast plains or steppes of southeastern Russia, bordering on the Caspian Sea. It is made from the milk of mares, preferably those which are light colored and unbroken, pasturing near mountain ranges where they can get running water and salt beds. They should be able to bathe frequently and must not be allowed to eat hay or oats (Burney Yeo). The milk undergoes both lactic and alcoholic fermentation, the lactos being converted partly into lactic acid and partly into alcohol and carbonic acid. Kumiss contains about 1 per cent., each, of proteins, fatty matter and lactic acid, 1.5 per cent. of alcohol and 2 per cent. of lactose (Friedenwald). On account of the impossibility of obtaining mares' milk in this country in sufficient quantity to manufacture kumiss for commercial purposes, it has been made by Brush and others from cows' milk.

In Asia Minor, Armenia, Persia, Turkey, Arabia and other eastern countries, cows' milk which has been boiled and then subjected to the lactic-acid fermentation has been extensively used, for many generations, as an article of diet. This is known in Turkey as toghoord and is also called oriental fermented milk. In the large cities of this country the demand for and sale of fermented milk have made its production a large industry. There are two kinds of this fermented milk: one thick, like jelly or condensed milk; the other liquid, like buttermilk or kumiss. The former differs from kumiss in not containing alcohol or carbonic acid in notable quantity. The casein is partially digested.

Following the extensive studies, during the last three or four decades, of the bacteria, and especially of the bacteria of fermentation, and in particular of the bacteria of the lactic-acid fermentation, the idea was conceived by the manufacturing pharmacists who offer bacteriologic products to the profession of furnishing pure cultures of various individuality of the lactic-acid bacilli group. These are recommended for use in two ways: (1) to sour milk and to produce a sort of artificial buttermilk; (2) to be taken into the stomach with the expectation that they will undergo multiplication there and in the intestines, and thus aid digestion and prevent or diminish the growth within the alimentary canal of other less useful and positively injurious bacteria, such as those which accompany putrefaction, and whose development is associated with the production of various toxic substances which give rise to toxemia.

The Profession and the Legislatures.—The *New York State Journal of Medicine* says that the profession has not fared well at the hands of legislators. The legislation secured to elevate the standard of the profession and protect the public from quacks has resulted, with the help of the same legislatures, in turning turkish-bath rubbers into doctors, and the optician has succeeded in usurping some of the most delicate functions of the physician. If the legislature continues to license successive schools of quackery we may well question the wisdom of state control of license to practice medicine. On account of this and on account of the general education in hygiene and preventive medicine, the income of the profession has been greatly diminished. The remedy would be to increase the fees, but this could not be effected without thorough organization and loyalty to each other on the part of the doctors. The New York journal says further that it is the universal opinion that an agreement in regard to fees would not be respected, and that this assertion is striking proof that there is real distress in our ranks, and that medicine is degenerating into a vulgar game of grab, a sordid struggle for mere existence.

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[For other information see second page following reading matter]

SATURDAY, MARCH 12, 1910

THE AMERICAN MEDICAL ASSOCIATION—ITS POLICIES AND ITS WORK

III. ORGANIZATION AND REORGANIZATION[1]

During the past nine years the American Medical Association has accomplished more for the improvement of conditions in the profession and for the good of the public than during all the previous years of its existence. This is a strong statement, but a true one. What has been accomplished was made possible by the reorganization of the Association and its various branches in 1901. As the progress of the last nine years would have been utterly impossible without this reorganization, it will be well, before considering the work of the Association, briefly to review its history and development and to show what this change in the organization meant. To do this will be to repeat matter that appeared in THE JOURNAL previous to nine years ago, but, inasmuch as over 40,000 physicians have entered the medical profession since 1901 and as between 45,000 and 48,000 physicians are now reading THE JOURNAL who did not read it then, the matter will bear repeating.

The first meeting for the organization of a national medical association was held in May, 1846, in response to a call issued by the Medical Society of the State of New York: "That a national convention from medical societies and colleges in the whole union convene in the City of New York for the purpose of adopting some concerted action on the subject of medical education." At its February, 1846, meeting the same society adopted a supplementary resolution: "That the first resolution did not contemplate the appointment of delegates by county or merely local societies in those states whose delegates are appointed by the regularly organized state societies." The original intention, therefore, was to limit representation to state societies wherever such existed, and that local societies should be represented only where there was no state organization—an interesting point, in view of later developments. The second national convention (Philadelphia, 1847) was really the first meeting of the American Medical Association and the one at which the plan of permanent organization was adopted. This plan provided for representatives not only from "permanently organized medical societies," whether local, district or state, but also from medical colleges, hospitals, asylums, etc. Each body entitled to representation could send one delegate for every ten members. Later, representation was limited to medical societies, the only addition being that the three government medical services were each allowed to send representatives.

At that time a physician could become a member of the American Medical Association only by being elected a delegate to the Association, and after his delegated powers had expired he could remain as a "permanent member," but without the right to vote. Restricting the right to vote to actual delegates, by the way, was continued in spite of repeated efforts to change the law. This right in the American Medical Association has always been limited to those who have been duly appointed or elected delegates. While the number of societies—and consequently the number of delegates and "permanent members"—continued to increase, no modification was made in the by-laws that specified which societies should be regarded as "affiliated,"[2] neither was the basis of representation changed.

The majority of the delegates in attendance at any gathering previous to reorganization came from those states contiguous to the place of meeting, and thus that portion of the profession living near the meeting-place always could—and frequently did—control the action of the whole Association. Hence the composition of the General Meetings—the business body—was fortuitous, depending almost entirely on the location; the meetings were frequently so large as to make it impossible to transact business or, on the other hand, so small that sometimes there were not more than a dozen present when important action was taken.[3] At the annual sessions delegates with the right to vote were seated with "permanent members" (ex-delegates) and "members by application," etc., so that it was impossible to distinguish the voters from the non-voters. So large had the number in attendance at the "General Meetings" become that many received the impression that the Association was a mass-meeting of individual members and not a delegated body—an assumption without justification. The

1. Chapters I and II appeared last week, page 796.

2. There were in Chicago in 1901 the following "affiliated societies," each of which was entitled to send one representative for every ten, or major fraction of ten, of its membership: Chicago Academy of Medicine, Chicago Gynecological Society, Chicago Laryngological Society, Chicago Medical Society, Chicago Medico-Legal Society, Chicago Neurological Society, Chicago Ophthalmological and Otological Society, Chicago Orthopedic Society, Chicago Pathological Society, Chicago Pediatric Society, Chicago Physicians' Club, Chicago Society of Internal Medicine, Chicago Society of Medical Examiners, Chicago Therapeutic Society, County Hospital Alumni Society, North Chicago Medical Society, Scandinavian Medical Society of Chicago.

3. "On the first day the General Session is not scheduled to begin until 11 a. m., and the opening exercises and President's address, together with the reports, take up that day's session. The average time of the other three days will be less than 2½ hours, making a total of 7½ hours. The three orations and the time devoted to opening the meeting will take more than an hour each day. This leaves but 3½ hours to be devoted to miscellaneous business, including the necessary reports that come in day by day from the various committees appointed at the meeting. The last day's session is nearly always a short one, so that it is believed that the total time allowed for the transaction of business at each annual session of the Association does not amount to more than three hours. The fact that important business is neglected and that problems of vast import to the profession and the people are not considered, has been known and appreciated for years." See "Preliminary Report of Committee on Organization," THE JOURNAL A. M. A., May 25, 1901.

large number of delegates made a roll-call or verification of the vote impossible, so that all measures had to be passed *viva voce*.[4] Scientific matters, reports of committees, resolutions, and parliamentary tactics were so inextricably mixed as to make the orderly and effective transaction of business impossible.

That the need of reforms was realized is shown by the transactions of the Association from its organization to 1901. That the profession was anxious and willing to bring about better conditions is evidenced also by the fact that practically everything that the Association has done in the past nine years, and that it is now doing, had been suggested and discussed long ago; lengthy resolutions as to what ought to be done had been repeatedly and enthusiastically adopted. In other words, the Association had *expressed* itself on every possible topic, but, in actual constructive work, had *done* practically nothing. The reason for this is apparent when one considers what the annual meetings of the Association were and how its business body was constituted. The wonder is not that it did so little, but that it did so much; for the practical scope of the Association's activity, aside from purely scientific work, was limited to the passage of resolutions and the exercise of the moral influence of the organization.

As early as 1869, and particularly in 1874, 1881, 1887 and 1894, different propositions for changing conditions were suggested. In 1887 a committee that had been previously appointed submitted a new plan of organization, including a constitution and by-laws, which in their essential provisions were almost identical with those finally adopted in 1901. As a matter of fact, this plan was actually adopted, but later, through parliamentary technicalities, the question became involved in a tangle which was never satisfactorily straightened out.

Finally, at the Atlantic City session (1900), a committee of three was appointed to take up the whole matter and to suggest changes which would cover the entire country and unite the profession into a solid and well-organized body.[5] This committee first studied the plans of other organizations, especially medical bodies, including particularly the various state and county societies. On the results a tentative plan was outlined which, however, differed essentially from that finally recommended and adopted. The committee held meetings in different cities, calling on local men for suggestions, advice and criticisms, which were forthcoming and resulted in modifying the original scheme. A plan was then drafted and 500 copies of it were sent to as many physicians in the various parts of the country from whom many valuable criticisms and suggestions were received. The plan, still further modified and accompanied by an "argument" of some 5,000 words, was then printed in THE JOURNAL two weeks before the meeting in order that all members might have an opportunity to become familiar with it.[6]

At the St. Paul meeting, in 1901, the matter was referred to a large committee composed of one member from each state and of the standing business committee, itself including thirty-nine members, making in all a committee representative of the whole country. Several sessions were held and every phase of the subject was discussed with thoroughness, further modifications and changes being suggested. This committee finally recommended the new constitution and by-laws, and the next day the general meeting adopted them, almost unanimously.

Probably no subject of interest to the medical profession was ever given more careful thought and study by so large a number of competent men as was this problem of the reorganization of the national, state and county societies—in other words, the organization of the medical profession of the United States. The final result, was not the work of a few men, but of hundreds of the most prominent and able members of the medical profession.

The real changes made, so far as the American Medical Association was concerned, were only three: (1) the right of representation was restricted to state associations; (2) the apportionment was so modified as to provide that the total number of delegates should not exceed 150; and (3) this body of 150 members, instead of coming together as a "General Meeting" of the American Medical Association, as was the case previous to 1901, was given the distinctive name of the House of Delegates of the American Medical Association. These three essential changes, and these alone, were made in the organic law of the Association, and yet how marvelous have been the results.

The organization of a distinct, representative, delegated business body, which could devote its entire time during an annual session to the transaction of business, made it possible for the Association to assume activities long contemplated, but never before realized. The most important results achieved are the systematic organization of the profession; the establishment of the Council on Pharmacy and Chemistry, with its epoch-making work; of the Council on Medical Education, which has done more for the improvement of educational conditions in medical schools in the last seven years than had been accomplished in the fifty-five years preceding; of the Committee on Medical Legislation, capable of adopting a permanent legislative policy and, through its bureau, of carrying it out into practical legislation; the compilation and publication in five years of two editions

4. In this connection an incident that occurred at the St. Paul meeting—the last held under the old plan—is worth recalling. An important motion was before the house and, before the vote was called for, a member insisted that the massing together of voters (delegates) and non-voters made a *viva voce* vote an absurdity and he demanded a call of the roll. Then some one asked how long it would take to call the roll and it was suggested that as there were 1,767 delegates present it would require several hours. It was therefore moved that the vote on the question be postponed until the following year—a motion that was carried, as the minutes show, "amid laughter."

5. This committee consisted of Dr. W. W. Keen, the retiring president, Dr. J. N. McCormack and Dr. George H. Simmons. After finding that the work of the committee as outlined would require too much time and travel, Dr. Keen resigned and Dr. P. M. Foshay, of Cleveland, was appointed in his place.

6. See THE JOURNAL A. M. A., May 25, 1901.

of the American Medical Directory, together with the accumulation and arrangement of an enormous amount of biographical material of incalculable value; the public educational work of Dr. J. N. McCormack; the invaluable work of such committees as those on Ophthalmia Neonatorum, Nomenclature and Classification of Diseases, Defense of Medical Research, Public Instruction on Medical Subjects, etc.—in short, the carrying into actual effect of the suggestions and recommendations of the most progressive members of the Association for the last fifty years. These results fully justify the statement made in the beginning of this editorial, that the Association has actually accomplished more in the last nine years than had been accomplished in its entire previous existence.

The effect of reorganization on the state and county societies will be considered next week.

SOME RECENT OBSERVATIONS ON INHERITED SYPHILIS

After Schaudinn had brought forward the *Spirochæta pallida* as the probable cause of syphilis, the finding that gave the strongest support to the claims of this organism as the long-sought specific cause of syphilis was undoubtedly the positive results obtained by investigation of children born dead with inherited syphilis. The presence of spirochetes, sometimes in enormous numbers, within the internal organs of syphilitic fetuses freshly delivered under aseptic conditions, could not well be explained on any other basis than that they are the specific etiologic factor of the disease, and the abundant verification of this fact soon compelled acceptance of the spirochete by many who at first had been skeptical. And until by successful cultivation and inoculation all the laws of Koch have been satisfactorily and repeatedly fulfilled it will be the findings in the congenitally syphilitic fetus, rather than the observations in acquired syphilis of adults, by which the defenders of Schaudinn's organism will resist the attacks of those who would deny its claims. Conversely, the demonstration of the spirochete and the subsequent introduction of the Wassermann reaction have thrown much light on the unsettled points in the pathogenesis of inherited syphilis, and especially on the true significance of that much disputed law of Colles.

From the very first the investigations of syphilitic fetuses demonstrated as a striking feature that the number of the spirochetes to be found in the fetal tissues was often very great, far more than were usually found in the lesions of adults. Also the spirochetes when present in the placenta were found only in the fetal portion, and practically never in the maternal elements.[1] These facts were thought by some to speak in favor of the view that paternal infection of the fetus might occur, with secondary immunization of the uninfected mother, as has been assumed from the original statement of Colles' law. On the other side, the demonstration that the cause of syphilis was an organism of some size made it improbable that paternal infection of the ovum could be a cause of inherited syphilis; how could a spermatozoon laden with a large motile spirochete ever reach the ovum, and if it did reach and penetrate the ovum could successful development of the germ cells possibly take place in the presence of so pathogenic an infectious agent? That the spirochetes are more abundant in the tissues of the fetus than in those of the mother does not prove that they have first infected the fetus, but rather and more probably means that they find a less resistant soil in the undeveloped embryo; this view has support from the conditions existing in congenital tuberculosis, for in these cases, in which infection certainly occurs from the mother, the tubercle bacilli have been found in enormous numbers in the tissues of the fetus.

By combining the Wassermann test of both fetal and maternal blood with microscopic search for the spirochetes, Baisch[2] has reached more satisfactory conclusions as to the relations of mother and child in inherited syphilis than is possible by the use of either method alone. As has been pointed out by previous investigators, the positive result of the Wassermann reaction with the blood of the mother of a syphilitic fetus does not help us in our analysis of Colles' law, for if the fetus is syphilitic the mother might well have syphilitic antibodies in her blood without being infected, the antibodies being either derived directly from the fetal blood or formed by the mother in reaction to soluble toxic substances absorbed from the fetus. In this case, the assumption that the mother is rendered immune by her syphilitic fetus without herself being infected would be corroborated. However, Baisch seems to settle this point by finding that the hemolysis-inhibiting substance does not pass through the placenta in either direction, for in several cases it was found that the mother's blood gave a positive Wassermann reaction while the blood of the fetus gave a negative reaction, and in other cases the conditions were reversed. Also, of one hundred and sixteen cases of maternal syphilis there were twelve instances in which the blood of the mother gave a negative reaction in spite of the presence of a syphilitic fetus in which spirochetes were demonstrated. Baisch is convinced that the hemolysis-inhibiting substance is developed only in the organism in which the spirochetes exist, and also that the immunity of the mothers of syphilitic offspring always means that the mother has been infected with syphilis. This conclusion is entirely in harmony with the view arrived at by many careful clinical observers, and has also received support on the basis of the Wassermann reaction alone by Bergmann.[3]

Other findings of importance in connection with the application of the new methods of study to congenital

1. Mohn: Ztschr. Geb. u. Gyn., 1907, lix, 263; Pauli: Bull. Johns Hopkins Hosp., 1908, xix, 326.

2. Baisch, K.: München. med. Wchnschr., 1909, lvi, 1929.

3. Med. Klin., 1909, v, 1219.

syphilis that may be mentioned are the following: Of one hundred and two mothers giving birth to syphilitic fetuses, there were but twenty-seven, or 25 per cent., who showed any clinical evidence of either recent or old syphilitic lesions; the other seventy-five, however, all gave positive Wassermann reactions in spite of the absence of demonstrable lesions. Of all macerated still-born fetuses 80 per cent. of one hundred and forty investigated were the result of syphilitic infection, as shown either by the presence of spirochetes or positive serum reactions, but habitual abortion during the first four months of pregnancy was not found to be associated with syphilis. In the milk of syphilitic mothers antibodies may be present in large amounts,[4] and it is possible that this fact may be utilized to advantage, for it would probably be of benefit to syphilitic infants to receive such milk. It is possible that when the maternal infection is not virulent the placenta may be impervious to the spirochetes and protect the child, but when separation of the placenta takes place infection of the wounded placental surface may occur, thus explaining the cases in which the first lesions of inherited syphilis appear some weeks after birth.[5]

In still-born syphilitic fetuses the spirochetes resist maceration surprisingly well, in spite of the fact that they lose their virulence so soon after death that it is traditional in autopsy rooms that infection from syphilitic cadavers is almost impossible, no matter how fresh they may be; apparently loss of virulence is not associated with loss of structure and staining power in the case of the spirochetes. They are remarkably widespread in dead fetuses, being most frequently found in the adrenals, in which they can be detected in 97.5 per cent. of all cases, according to Trinchese, while in 53 bodies Bab found them in the lungs in 87.5 per cent., in the pancreas in 80 per cent., and in the skin, nose and eyes in from 67 to 25 per cent. Children with symptoms or signs of hereditary syphilis give a positive Wassermann reaction in 100 per cent. of all cases examined (Bergmann), and it is also possible for a syphilitic mother to give birth to a healthy infant which gives a positive reaction without ever showing evidences of infection. Infants born apparently sound and later developing evidences of syphilis do not give a positive reaction until the signs of infection manifest themselves.

THE PHYSICIAN AS A CITIZEN

That physicians as a class neglect or evade the ordinary duties of citizenship, and do not measure up to their opportunities and obligations in the large questions of public welfare, is a statement that is often made. While we do not admit that this is true to any great extent, yet it cannot be denied that there are grounds for this impeachment. An editorial in the February number of the *Southern Medical Journal* on "The Physician as a Citizen" discusses this in an interesting way. It states that there is no sufficient reason why the physician should consider himself in a separate class from other men regarding the obligations of every-day life, but that this is a course which he has long pursued, and which is coming more and more to be criticized and condemned. In defense of this attitude, the *Journal* says that the word "duty" is as sacred to the physician as to any other man, but to the physician the most important problems of duty may seem those relating to his patients and not to society in general; and perhaps from the viewpoint of the patients it is well that it should be so. But the medical man, no less than other men, has solemn obligations to nation, state and municipality, and it is his attitude of evasion and inertia which has contributed to the perversion of law and the demoralization of politics. The editorial further says that it is no excuse for the physician to plead the exactions of his practice as a reason for failure to exercise his suffrage or to manifest a becoming concern in the proper administration of public affairs. The lawyer, the clergyman and the merchant, though absorbed in their several callings, cannot be charged with habitually ignoring the call of civic duty and the opportunities of enlightened citizenship.

This would seem to be putting the case too strongly. We are hardly willing to admit that the physician so completely neglects his civic or political duties as is here indicated. Physicians are found taking part in every branch of governmental affairs, in local offices, in state legislatures, in Congress, and in the diplomatic service. A closer investigation would, it is believed, reveal the fact that perhaps as large a proportion of physicians vote and attend to the ordinary duties of citizenship as of any other business or profession. Indeed, it is one of the present-day complaints that business men of the better class do not sufficiently interest themselves in politics. Besides, as stated in the editorial, on account of the peculiar relationship of the physician to the people, a critical public soon learns to look with distrust on the physician who concerns himself to any extent with politics, sport or any other extraneous pursuit.

The *Southern Medical Journal* concludes its editorial by suggesting the sphere in which the real opportunity lies and in which the obligation of the physician as a citizen may find its largest and most useful expression. It says that an awakening public is beginning to realize that the fundamental condition of all social and material prosperity is the health and vigor of the people. The present agitation in health matters is most remarkable. To insure the results which should follow a movement so widespread and so earnest, the forces at work must be wisely directed, else they will be wasted in fruitless effort. This guidance the medical profession must furnish or fall short of the full measure of its usefulness. This defines clearly the field in which the physician can best fulfil his duty as a citizen, and it is to be deplored that in the active public movement against tuberculosis,

4. Bab: Ztschr. Geb. u. Gyn., 1907, lx, 161.
5. Lucas: Lancet, Feb. 1, 1908.

for instance, so many laymen rather than physicians have been the leaders. Other problems almost equally important press for solution, and the physician should take his proper place as leader and guide in the work. For, as stated in the editorial from which we have largely quoted, the broad-minded physician of the twentieth century, his talents dedicated to a life of service, cannot refuse to recognize the larger obligations of his calling, and should cheerfully and gladly assume his portion of the burden they entail.

HABITINA AND OTHER MAIL-ORDER DRUG CURES

One of the vicious mail-order drug "cures" which flood the market is discussed in this issue.[1] Free samples of this particular "cure" may be had for the asking, each sample containing enough morphin sulphate and heroin hydrochlorid to kill seven or eight healthy adults. Before the national Food and Drugs Act was passed this dangerous mixture could be sent through the mails with nothing on the label to show its tremendous potentialities for harm; now, fortunately, the label has to declare the amount of heroin and morphin the product contains. This is a splendid advance so far as it goes, but it does not go far enough. Most of the state laws recognize the principle that the public should be protected against itself; hence we find statutes forbidding the sale of dangerous drugs by pharmacists to laymen, except under certain restrictions. There is no law, however, which can be invoked against the ghouls who, for the sake of the dollar, take advantage of the impotency of the present postal regulations to sell that which will debauch and destroy their helpless victims. There is something radically wrong when irresponsible and conscienceless men, without even the pretense of scientific training or ability, should be able to use the United States mails and the express companies to scatter broadcast potent drugs of the most dangerous type. That it should be possible for the ignorant or the criminal to obtain without let or hindrance morphin and heroin in quantities limited only by the ability to pay for them, is a disgrace to a civilized country and a serious menace to public health.

THE PHARMACOPEIAL DELEGATES

We publish this week a supplementary list of delegates to the Pharmacopeial Convention. From these lists[2] it appears that, of the one hundred and twenty-seven institutions and organizations represented in the Convention of 1900, but seventy-three have thus far notified the committee of the appointment of delegates; while twenty-nine new organizations may be added. Only nineteen state medical associations and twenty-seven medical schools have appointed delegates; in the pharmaceutical list twenty state associations, five other than state, and twenty-five colleges of pharmacy have made appointments. The lists also show that there are thus far appointed one hundred and thirty-six medical delegates and forty-five alternates; and one hundred and forty-three pharmaceutical delegates with one hundred alternates. In the latter list a number of names are duplicated, certain of them appearing in the lists of delegates and again among the alternates, showing a more diligent interest and definite determination to secure representation. The indifference of the medical schools is apparent; of the one hundred and forty-nine institutions listed in our Educational Number, Aug. 14, 1909, but twenty-seven have thus far indicated their interest in the Pharmacopeia by complying with the requirements and notifying the committee of the appointment of delegates. Notwithstanding all the agitation in the past few years, the much-advertised U. S. P. Propaganda, the get-together meetings of doctors and druggists and the as yet unsatisfied demand from many schools for competent pharmacologists who shall lay the foundations for a safe and sane therapy, our institutions are disregarding the tools already within their hands.

1. Pharmacology Department: "Habitina," page 889; also Original Articles Department: "Blindness from Heroin in Nostrum 'Habitina,'" page 869.

2. The first list, to which the present one is supplementary, appeared in THE JOURNAL, February 26.

TACTICS OF THE PRESERVATIVE PEOPLE

The members of the American Medical Association all over the country are receiving from one H. L. Harris, "publicist," 100 William Street, New York City, typewritten copies of matter attacking the editor of THE JOURNAL. It is probably unnecessary to remind our readers that Harris, who sometimes signs himself as H. H. Langdon, "food expert," has been previously shown up in THE JOURNAL as the press agent for the Pacific Coast Borax Company, 100 William Street, New York City. The motives will be fully appreciated if the previous articles dealing with this gentleman's activities are read, and, for the benefit of those who have not kept the back copies of THE JOURNAL, reprints have been made and will be sent on request.[1]

Medical News

CALIFORNIA

Only One Physician in County.—It is asserted by the San Francisco *Call* that there is only one physician in Trinity county, and that it recently became necessary to import a physician from another county to make up the commission required to pass on a case of insanity.

Hospital News.—The supervisors of Contra Costa county have accepted plans for the new county hospital to be erected in Martinez. The building will have a frontage of 118 feet, will be 68 feet deep, two stories and a basement in height, and will include accommodation for 36 ward patients and a number of private patients.——Dr. S. P. Purlenky, Fort Bragg, has purchased the Fort Bragg Hospital from Dr. Birney A. Lendrum.——Contracts are about to be let for the construction of a cement fireproof building for the St. Caroline Sanitarium Association at Redding, to cost $20,000.

Personal.—Dr. Jonas Clark, Gilroy, has been appointed physician of San Jose county, vice Dr. Howard B. Gates, San Jose.——Dr. Charles E. Zerfing has been appointed police surgeon of Los Angeles.——Dr. William F. McNutt, Jr., has been appointed health officer of San Francisco; Dr. George W. Goodale, city physician; Dr. Edward S. Howard, chief surgeon of the Central Emergency Hospital; Dr. Emmett LeR. Wemple,

1. Send a stamped addressed envelope for reprint. The articles appeared in THE JOURNAL, Oct. 5, 1907, p. 1191; Feb. 13, 1909, p. 562, and Jan. 1, 1910, p. 55.

Jr., medical inspector of schools, and Dr. Sidney R. Dannebaum, city bacteriologist.——Drs. John F. Richards and John F. Sullivan have been appointed members of the Pension Board of San Francisco Police Relief Fund.

Public Health Degree at Oakland College.—The Oakland College of Medicine and Surgery has elected Passed Assistant Surgeon W. Colby Rucker, U. S. P. H. and M.-H. Service, professor of public health and mental hygiene, and at his suggestion the college will offer next year to graduate physicians a course leading to the degree of Doctor of Public Health. This course will cover one year and will include personal and general hygiology; epidemiology; practical sanitation, parasitology; tropical medicine; sanitary law; inspection of milk, meats and other food products; factory inspection; public water supply; sanitary chemistry; sanitary architecture; vital statistics, and the economics of disease.

GEORGIA

Society Wants Permanent Home.—The Georgia Medical Society, Savannah, at its February meeting, discussed plans for the establishment of a library and the building of a permanent home for the organization, containing club quarters and laboratories.

Fined for Selling Cocain.—Dr. Henry B. Stanley, Savannah, formerly coroner of Chatham county, is said to have been fined $1,000, with the alternative of imprisonment, for violation of the state anticocaine law.

Joint Tuberculosis Hospital.—Fulton county has joined the city of Atlanta in the movement to build a tuberculosis hospital for the treatment of local patients. The county commissioners have appropriated $15,000 for the fund and the city of Atlanta has already made an appropriation of $10,000 for the purpose.

Reelected Member of Hospital Board.—Dr. Walter A. Crowe, Atlanta, who resigned recently from the medical board of Grady Hospital, was unanimously reelected a member of the board, February 22. The board consists of eighteen members, six each from the Atlanta College of Physicians and Surgeons, the Atlanta School of Medicine, and the city at large.

ILLINOIS

Hospital Incorporated.—The M. A. Montgomery Memorial Sanatorium has been incorporated at Charleston with a capital stock of $12,000. The object is stated to be to conduct a hospital and training school.

Gift to Retiring Superintendent.—At an informal gathering at the Elgin State Hospital, February 26, Dr. Vaclav H. Podstata, the retiring superintendent, was presented by the employees with an order for a library of medical books.

Tent Colony to Be Established.—Dr. J. Rex Sholl, health commissioner of Peoria, has completed arrangements for a summer tuberculosis colony on the Galena Road, on a tract of land owned by Dr. George A. Zellar, superintendent of the Peoria State Hospital. On this tract a large tent is to be erected for kitchen, dining-room and administration headquarters, and small tents will be provided for patients. The colony will open about April 15.

Personal.—In the Sangamon County Circuit Court, on February 24, Dr. Harry C. Blankmeyer, Springfield, was found not guilty of malpractice in the suit brought against him by John Nealon, in which damages of $5,000 were claimed.——Dr. Thomas C. Buxton, Decatur, coroner of Macon county, has been elected secretary of the Coroner's Association of Illinois.——Dr. Guy J. Wormley is reported to be seriously ill with pneumonia at his home in Sandwich.——At the annual meeting of the Alton Medical Society, February 24, Dr. Thomas L. Foulds was elected president; Dr. James M. Pfeiffenberger, vice-president; Dr. J. Bernard Hastings, secretary, and Dr. Waldo Fisher, treasurer.

Chicago

Vice Commission Named.—A vice commission of thirty to investigate and report on the social evil has been named by the mayor, including criminologists, socialists, educators, jurists, lawyers, and the following physicians: Drs. William A. Evans, William Healy, Anna Dwyer, James Nevins Hyde, William L. Baum and Louis E. Schmidt.

Maternity Hospitals.—It is proposed by the board of directors of the Chicago Lying-In Hospital to erect maternity hospitals on the south, north and west sides, to cost approximately $150,000. The site for the south side institution has already been chosen, and the north side institution may be located near the Children's Memorial Hospital.

The Work of the Pasteur Institute.—The Chicago Pasteur Institute for the Preventive Treatment of Hydrophobia and the Study of Infectious Diseases, in its nineteenth annual report, announces that since its inauguration, 4,158 patients have received anti-hydrophobic treatment. Of these 1,583 came from Illinois, 659 from Ohio, 355 from Wisconsin, 224 from Iowa, and 208 from Indiana. Only 8 patients died, equivalent to a mortality of 1.9 per 1,000. Of the cases reported, 3,651 were bitten by dogs, 151 by cats, 134 by horses, 37 by skunks, 6 by wolves, 65 by cows, 14 by calves, 2 by burros, 7 by coyotes, 8 by mules, 9 by pigs, 2 by sheep, 14 by squirrels, 1 each was bitten by a rat and a monkey, and 56 were infected by hydrophobic human beings.

INDIANA

Personal.—Dr. and Mrs. George W. Spohn, Elkhart, leave for Europe this month.——Dr. Isaac W. Inlow, Blue Ridge, is reported to be critically ill with cerebral hemorrhage.——Dr. Samuel C. Darroch, Cayuga, was thrown from his buggy while crossing a flooded culvert, February 22, and suffered severe cuts and bruises.——Dr. Charles F. Kme, intern at the Indianapolis City Dispensary, has resigned and will practice in Indianapolis.——Dr. D. L. Field has been elected president and Dr. Oliver P. Graham, secretary of the Jeffersonville Board of Health.

Society Meetings.—Hamilton County Medical Society, at its annual meeting and banquet in Noblesville, February 18, had as a guest Dr. Thomas C. Kennedy, Shelbyville, president of the Indiana State Medical Association, who delivered an address on the "Relation of the State Society to the County Society," and Dr. J. P. Simmonds, pathologist of the state laboratory, who read a paper on the "Early Recognition of Diphtheria." Dr. Thomas O. Redden, Jolietville, was elected president; Dr. Milton C. Haworth, Noblesville, vice-president; Dr. Julian E. Hanna, Noblesville, secretary-treasurer, and Dr. Frederick A. Tucker, Noblesville, delegate to the state medical association.——At the annual meeting of the Physicians' Club of Mishawaka, February 7, Dr. Henry C. Holtzendorff was elected president and Dr. James G. Bostwick was reelected secretary.

KANSAS

County Society Meeting.—The Franklin County Medical Society, at its seventh annual meeting, held in Ottawa, January 26, elected Dr. John M. McWharf, president; Dr. Edward B. Gossett, vice-president, and Dr. James Ball, secretary-treasurer, all of Ottawa.

Personal.—Dr. R. A. Young has been appointed a member of the medical staff of the Topeka State Hospital.——Drs. S. T. Zinke and Clarence C. Goddard have been suggested by the Leavenworth Medical Society as sanitary officers to serve without pay and to hold office until December 31.——Dr. Samuel T. Gillespie, Lawrence, has been appointed health officer of Douglas county, vice Dr. John C. Rudolph, Lawrence.——Dr. Henry A. Nave, Kansas City, has been appointed police surgeon.——Dr. Francis C. Herr, Ottawa, has been appointed physician and health officer of Franklin county, vice Dr. Willis L. Jacobus, Ottawa.

KENTUCKY

University News.—The mayor of Louisville has transferred to the general council the names of Mr. Bruce Haldeman and Mr. Marion E. Taylor as trustees of the University of Louisville for ten years, the terms of the Hon. David Fairleigh, president, and Dr. Louis Ryans having expired. The council has been asked for an appropriation of $25,000 for the support of the academic department.

Infected Books.—A plan has been formulated by the librarian of the Louisville Free Public Library for handling books in homes where a communicable disease has been reported. In cases of smallpox and diphtheria the books are destroyed; in other cases a notice is sent to the infected house, requesting that library books there be delivered to the health officer when the house is disinfected. The health officer is notified that books are being held for disinfection, and after disinfection, a certificate to that effect is placed in the book by the disinfector.

Personal.—Dr. Thomas C. Evans, dean of the Medical Department of the University of Louisville, has resigned, to take effect July 1. His successor has not yet been appointed.——Dr. Americus V. Menefee, Williamstown, has been elected secretary of Grant County Board of Health.——Dr. James E. Stone has been elected secretary of the Hopkinsville Board of

Health.——Dr. Darwin Bell, Gracey, has been elected a member of the Christian County Board of Health.——Dr. Henry C. Smith, Allen Springs, is reported to be critically ill with pneumonia.

MARYLAND

Pure Food Bill Passed.—The pure food bill, championed by Dr. Thomas A. Ashby, Baltimore, passed the House of Delegates unanimously and without change, March 4, and has now gone to the senate.

Publicity Campaign Against Blindness.—The Maryland Society for the Prevention of Blindness has issued an appeal for a publicity campaign to instruct the public regarding the means of preventing ophthalmia neonatorum and other diseases which may cause blindness.

Lunacy Bill Amended.—The bill providing for the state care of the insane has been amended, and now provides for a bond issue of $600,000, for the purchase of 250 acres of land for the negro hospital, and an appropriation of $100,000 for the use of that institution; $270,000 to the Springfield Hospital; $80,000 for the Spring Grove Hospital, and $150,000 for the Owings Mills Institution for the Feeble-Minded.

Society Meeting.—At the annual meeting of Georges Creek Medical Association, held in Frostburg, February 26, the following officers were elected: President, Dr. John H. McGann, Barton; vice-president, Dr. James C. Cobey, Frostburg; secretary, Dr. James C. Holdsworth, Eckhart Mines; treasurer, Dr. W. Oliver McLane, Frostburg, and censors, Drs. Timothy Griffith, and J. Marshall Price, Frostburg, and Frank L. Clymer, Midlothian.

Personal.—Captain J. Wright Downey, Newmarket, assistant surgeon, First Infantry, Maryland National Guard, has been placed on the retired list.——Drs. Henry P. Fahrney and William G. Bourne, Frederick, have been appointed physicians of the Montevue Hospital.——Dr. John R. Littlefield has been placed in charge of the Emergency Hospital opened at the Western Maryland Central Station, Cumberland.——Drs. Henry M. Hurd and Thomas S. Cullen, Baltimore, left March 4 for a trip through Florida and Cuba.

MICHIGAN

County Medical Society.—At the meeting of the Ontonagon County Medical Association, held in Ontonagon, February 24, Dr. William B. Hanna, Mass, was elected president; Dr. Rudolph, Rockland, vice-president; Dr. John S. Nitterauer, Ontonagon, secretary-treasurer, and Dr. Andrew L. Swinton, Ontonagon, trustee.

Sanatorium Notes.—At a meeting of the Ann Arbor Tuberculosis Society, February 6, it was decided to recommend the purchase of the Coleman site for a sanatorium, for $3,500. Dr. Alfred S. Warthin was elected secretary of the society.——Fire in the heating plant of Otter Lake Sanatorium, February 14, did damage to the extent of $200.

Founders' Day.—The University of Michigan, Department of Medicine and Surgery, celebrated its sixtieth founders' day, February 15. The principal address was made by Prof. W. E. Parker, whose subject was the work of Dr. George E. Frothingham, Detroit, who resigned from the faculty because the regents refused to move the clinical department of the university to Detroit.

Personal.—Dr. George E. Potter has been made a member of the Detroit Board of Health.——On the occasion of the fortieth anniversary of the entry of Dr. Walter H. Bills into practice, he entertained his professional brothers of Allegan with a dinner, at which he was presented with a signet ring.——Dr. Daniel A. Z. Vannoppen, city health officer of Niles, has been appointed deputy state dairy and food inspector.——The members of the Ottawa County Medical Society presented their president, Dr. Thomas G. Huizinga, Zeeland, with a gold-headed cane on the occasion of his fiftieth birthday anniversary.——Dr. Jesse E. Wilson, Rochester, celebrated his eighty-first birthday, January 31.——Dr. Nushan H. Kassabian has been elected secretary of the newly organized Coopersville Antituberculosis Society.

Mortality of Michigan in 1909.—The total number of deaths, exclusive of still births, registered during 1909, numbered 35,586, or 13.3 per 1,000 of population. The rate for the previous year was 13.6 per 1,000. The months of maximum mortality were March, April and August. The month of minimum mortality was November. The deaths of infants under one year decreased from 7,451 in 1908 to 7,115 in 1909. The deaths of children from one to four years of age decreased from 2,348 in 1908 to 2,270 in 1909, and the deaths of individuals sixty-five years of age and over increased from 10,667 in 1908 to 10,985 in 1909. The deaths from pulmonary tuberculosis numbered 2,140, a decrease of 24 over the preceding year. Typhoid fever caused 613 deaths, or 43 more than in 1908. Diphtheria caused 375 deaths, or 51 more than for the previous year. There were 82 more deaths from scarlet fever in 1909, and a great increase was noted in the number of deaths from measles. Deaths from pneumonia and bronchopneumonia were 2,150, or a slight decrease over last year. A notable decrease is noted in deaths from diarrhea and enteritis of infants, when 1,515 were noted, as compared with 2,030 for the previous year. The mortality from meningitis, influenza, cancer, violence and smallpox decreased during the year.

MISSOURI

County Society Elections.—At the annual meeting of Jackson County Medical Society, held in Kansas City, March 1, Dr. Herman E. Pearse was elected president, vice Dr. Bennett C. Hyde, resigned, on account of ill health; Dr. Jefferson D. Griffith was installed as vice-president; and Dr. William F. Kuhn, as treasurer. Dr. Edward L. Stewart, the secretary, was installed at the previous meeting; all of Kansas City.

Personal.—Dr. Ashman H. Vandivert, Bethany, has been made acting superintendent of State Hospital No. 2, St. Joseph.——Dr. William R. Strickland has been made postmaster of Rockport.——Dr. Forrest V. Keeling, Elsberry, who was operated on for appendicitis in St. Louis, February 3, has returned home convalescent.——Dr. H. V. Good, Henry W. Westover, Oliver C. Gebhart, James K. Graham, Emmett S. Ballard, and Daniel Morton, all of St. Joseph, have been elected directors of the Buchanan County Society for the Prevention of Tuberculosis.

St. Louis

Demonstrates Circulation of Blood.—At the February meeting of the Medical Society of the City Hospital Alumni, Dr. William H. Luedde demonstrated the circulation in the human conjunctiva by means of the binocular microscope with special illumination. The red corpuscles were plainly visible, coursing with variable velocity in the smaller arterioles and capillaries. Attention was called to its use in detecting the earliest changes in arteriosclerosis and the variation in the velocity of the blood current.

MONTANA

Society Elections.—At the annual meeting of Silver Bow County Medical Society, held in Butte, February 23, Dr. Creswell T. Pigot was elected president; Dr. Michael J. Scott, vice-president; Dr. Phoebe A. Ferris, secretary, and Dr. Donald Campbell, treasurer, all of Butte.——At a recent meeting of Missoula County Medical Society, held in Missoula, the following officers were elected: Dr. Harry C. Smith, president; Dr. George M. Jennings, vice-president; Dr. W. Buchanan Parsons, secretary-treasurer; Drs. James P. Aylen, Harry B. Farnsworth, George T. McCullough and William E. Shea, delegates to the state society, and Drs. John G. Randall, Frank D. Pease and Emanuel M. Rundiquist, alternates, all of Missoula.——The Tri-County Medical Society of Custer, Dawson and Rosebud counties, at its annual meeting at Glendive, January 5, elected Dr. Thomas A. MacKenzie, Miles City, president; Dr. Francis S. Gray, Miles City, vice-president, and Dr. Ambrose L. Hammerel, Glendive, secretary.

NEBRASKA

Hospital Opened.—St. Marks Episcopal Church, Hastings, has leased a house at 235 East 7th street, and has opened it as a hospital, to be known as St. Mark's Hospital. The institution will accommodate twelve patients.

Personal.—Dr. DeWitt C. Bryant has been reelected president and Drs. Dellizon A. Foote, vice-president of the Physicians Casualty Association, Omaha, and Drs. Frank S. Owen, William F. Milroy and Ralph W. Connell have been reelected directors.——Dr. Harry L. Wells, West Point, has been appointed physician of Cuming county.

Society Meeting.—At the annual meeting of Scotts Bluff County Medical Society, held in Mitchell, in January, Dr. George R. Gilbert, Morrell, was elected president; Dr. Claude D. D. M. M. S. Langrall, Minatare, vice-president; Dr. Byron Bailey, Gering, secretary-treasurer; Dr. Andrew J. Faulk, Mitchell, delegate to the state association, and Dr. Alfred J. Stewart, Mitchell, alternate.

To Test License Law.—On the request of a number of physicians of Omaha, the State Board of Health has decided to

ask Dr. Archibald L. Muirhead, Omaha, to go before the grand jury at Omaha at the next session and testify regarding the conduct of Dr. John T. Mathews, Omaha, alleged to be practicing without a license. Dr. Mathews is said to have had his license revoked about two years ago, but asks a rehearing of the matter on the ground of newly-discovered evidence.

NEVADA

Hospital Reopened.—The Peoples Hospital, Reno, which has been closed for some time, was reopened February 15 as St. George's Hospital.

Personal.—Dr. Edward S. Grigsby, Rhyolite, has purchased the practice of the late Dr. Charles L. Hammond, Tonopah.——Dr. Sidney Clark has returned to Tonopah with his sight almost restored, after a severe attack of facial erysipelas.——Drs. John A. Lewis and William H. Hood, Reno, left for a trip around the world, February 5.

New Officers.—The physicians of Tonopah, at a meeting, February 23, organized the Nye County Medical Association, and elected the following officers: President, Dr. Sidney Clark, Tonopah; vice-president, Dr. John R. Cunningham, Tonopah; secretary-treasurer, Dr. C. J. Richards, and board of control, Drs. William W. Ashley, Goldfield, Reynold J. Mapes, Tonopah, D. P. McLeod, Tonopah, and Edward S. Grigsby, Rhyolite.——At the annual meeting of Humboldt County Medical Society, held in Winnemucca, January 27, the following officers were elected: President, Dr. Charles E. Swezy, Winnemucca; vice-president, Dr. J. A. Russell, Lovelocks; secretary-treasurer, Dr. Samuel J. King, Winnemucca, and censors, Drs. John P. Martin, Lovelocks, Patrick J. Mangan, Winnemucca, and John Schaffner, Golconda.

NEW YORK

Personal.—Dr. A. L. Benedict, Buffalo, wishes it announced that the publication of extracts from his article on "Some Prevalent False Notions About Diet," that appeared in New York newspapers, was entirely without his knowledge and consent.

Coroner's Physicians Under Civil Service Law.—A bill has been introduced into the legislature providing that there shall be four coroner's physicians in Manhattan, four in Brooklyn, two in Queens, two in the Bronx and one in Richmond. The vacancies are to be filled by the coroners in the boroughs in which they occur, subject to the civil service law. The salaries are to be fixed by the board of estimate and apportionment, but are not to exceed $3,000.

Yonkers' Infected Water.—The mayor of Yonkers has conferred with the mayor of Greater New York to see if any arrangement can be made by which Yonkers can be permitted to tap the Croton water supply. Dr. William S. Coons, Health Officer of Yonkers, insists on the immediate abandonment of the present source of supply as absolutely unfit, and as responsible for the present outbreak of typhoid fever and for former epidemics. A bill has recently been introduced into the legislature permitting the tapping of the Croton Aqueduct by Westchester towns and cities.

The State Insane.—The annual report of the State Commission in Lunacy shows that the number of insane committed in the public and private hospitals at the close of the fiscal year was 31,541, of whom 15,107 were men and 16,434 women. The net increase in all institutions was 1,084; in state hospitals alone, 1,015. The total cost of maintaining the insane during the year amounted to $6,899,287. The commission submits an estimate, for 1910, of $8,420,315, $2,385,315 of this sum being required to provide additions to existing hospitals and for the beginning of work at the newly-acquired site at Yorktown. The estimated cost of maintaining each patient during 1910 and 1911 is $190 a year as against $185 in 1907, and $184.44 in 1908.

New York City

Harvey Society Lecture.—The eighth Harvey Society lecture, given March 19, by Prof. A. Magnus-Levy of the University of Berlin, is on "Pathology and Therapy in Diseases of Metabolism."

Hospitals Unite.—The consolidation of the New York Infant Asylum with the Nursery and Child's Hospital under the name of the New York Nursery and Child's Hospital has been approved by Supreme Court Justice Platzek.

Crusade Against Spitters.—Members of the health squad have been traveling on trains, trolley cars and boats, warning passengers that they must use cuspidors and not spit on the floors of those vehicles. Many arrests have been made and fines imposed.

Consumptives to Be Concentrated.—The Board of Estimate and Apportionment recently took steps toward the concentration of consumptive patients in one hospital. This plan will save the city a large amount of expense annually. This board has been inspecting the property near Otisville, Orange county, where the new sanatorium is to be erected unless too strenuous opposition is made on the part of the residents of that section.

OHIO

Medical Periodicals in Public Library.—The Columbus Medical Library Association has furnished the librarian of the Columbus Public Library a list of 40 domestic and 28 foreign medical periodicals, which are to be placed on file in the library.

Pasteur Institute Plan.—A bill has been introduced in the senate to appropriate $1,000 to organize and equip a Pasteur institute for the treatment of hydrophobia, at the Ohio State University, Columbus, and to appropriate $1,000 annually for maintenance.

Personal.—Dr. William L. Dick has been reelected medical inspector, and Dr. James A. Beer, chemist and bacteriologist of the Columbus Board of Health.——Dr. Harry H. Drysdale, Cleveland, has been appointed a member of the State Board of Charities.——Dr. Robert W. Crume has been elected district physician of Hamilton, vice Dr. Harry Silver.

Will Not Admit Advanced Cases.—The superintendent of the State Sanatorium, Warrensville, has ruled that all applicants must appear before an admittance board, and that persons suffering from advanced tuberculosis will not be admitted, as the object of the sanatorium is to treat incipient cases.

Society Meetings.—The Union Medical Association of the Sixth Councilor District met in Akron February 8, and elected Dr. Jacob F. Marchand, Canton, president; and Dr. John H. Seiler, Akron, secretary-treasurer.——At the annual meeting of the North Side (Columbus) Medical Research Society, February 15, Dr. James A. McClure was elected president; Dr. George K. Colville, vice-president; Dr. Adam G. Elder, secretary, and Dr. Earl W. Evans, treasurer.

Cincinnati

Hospital Changes.—The following changes in the staff of the Cincinnati Hospital are announced: junior surgeon, Dr. Dudley W. Palmer; assistant radiographer, Dr. William Daughty, and curators, Dr. Albert J. Bell, vice Dr. Charles S. Rockhill, recently appointed physician of the Branch Hospital, and Drs. Joseph T. Kennedy, Goodrich B. Rhodes and Eugene S. May.

Personal.—Dr. Henry Martin Fischer, formerly professor of physiology in the University of California, has been appointed to the lately-endowed Eichberg chair of physiology in the Ohio-Miami Medical College, and Dr. Charles Goosmann has been appointed demonstrator of pathology in the college.——Drs. Nathaniel P. Dandridge, clinical professor of surgery, Alexander G. Drury, professor of hygiene, and Edmund W. Baehr, assistant professor of physiology in the Ohio-Miami Medical College, have resigned.

PENNSYLVANIA

Philadelphia

Resolutions Regarding Dr. Stanton.—The staff of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis, at its meeting February 21, adopted resolutions eulogistic of the late William Bancroft Stanton, and expressing its sense of profound grief and irreparable loss in his death.

Fills Vacancy.—At a meeting of the trustees of Jefferson Medical College, Dr. Francis T. Stewart was elected professor of clinical surgery, to occupy the place made vacant by the promotion of Dr. W. Joseph Hearn to emeritus professor. Dr. Stewart is also professor of surgery in the Polyclinic Hospital, out-patient surgeon to the Pennsylvania Hospital, and surgeon to the Germantown Hospital.

Milk Licenses.—The Department of Health and Charities is having trouble in enforcing its new milk laws. As the only means of protecting the public against impure milk, the department is insisting that all restaurants and all other distributors or sellers of milk in any way must procure licenses,

according to the law imposed on all dealers of milk. Groceries, soda water fountains and restaurants will all come under the inspection of the department's employees.

Forced to Pay for Insane Patients.—The assistant city solicitor estimates that $3,000,000 have been lost to the state through the failure of the various counties to enforce the law requiring relatives to pay the board of insane patients in the state hospitals. Much of this money is not now collectable, as the accounts have been outlawed, but in the six years since the solicitor's office began to proceed against the delinquents, more than $200,000 has been recovered. On March 2, more than 40 delinquents appeared in Quarter Sessions court and $1,600 was collected. Many other delinquents failed to appear and for these bench warrants were issued.

Postgraduate Course in Tuberculosis.—A postgraduate course will be given in the clinic-room and wards of the Philadelphia Hospital on pulmonary tuberculosis, by Drs. Albert P. Francine, William G. Turnbull and Sidney J. Repplier. This course is open to graduate physicians of Pennsylvania of either sex, from May 16 to June 4. The class will meet at 2:30 p. m. daily, except Saturdays and Sundays, in the clinic-room of the hospital, where clinical conferences will be held for an hour on some phase of tuberculosis. Demonstration of the diagnostic tuberculin reactions will be made and an opportunity will be given for the class to become familiarized with the technic of these tests; The value of the *x*-ray with demonstration of plates and their interpretation will be discussed, as well as heredity, sources and routes of infection, immunity, the viability of the tubercle bacillus, its localization, the classification and types of the disease, etc. Following these daily conferences, the class will be taken into the wards and assigned cases individually for study under supervision of instructors, who will subsequently demonstrate fully the cases to them. The class will be limited to 15, applications will be considered in order of receipt, and must be made in advance to Dr. Albert P. Francine, 218 South Fifteenth street, Philadelphia.

SOUTH CAROLINA

State Conference for Good Health.—At the State Conference for Public Health, held in Columbia, February 22 and 23, the chief topics discussed were the communicability, curability, and preventability of tuberculosis, the responsibility of the physician, the legal powers and responsibilities of health officials, methods of administration and financing health work, preventive medicine, malaria and its eradication, the responsibility of the people as regards public health, the hookworm disease, and typhoid fever.

County Society Meetings.—Laurens County Medical Society, at its annual meeting January 14, elected Dr. William D. Ferguson, Laurens, president; Dr. Thomas L. W. Bailey, Clinton, vice-president; Dr. Jesse H. Teague, Laurens, secretary; Dr. Absolom J. Christopher, Laurens, treasurer, and Dr. Theodore J. Peake, Laurens, censor.——Newberry County Medical Society, at its annual meeting, January 14, held in Newberry, elected Dr. Jacob S. Wheeler, Prosperity, president; Dr. William E. Pelham, Newberry, vice-president, and Dr. Frank D. Mower, Newberry, secretary-treasurer.——Spartanburg County Medical Society, at its annual meeting held in Spartanburg, elected the following officers: Dr. Algernon R. Fike, Spartanburg, president; Dr. William A. Smith, Glendale, vice-president; Dr. William J. Chapman, Inman, secretary; Dr. James L. Jeffries, Spartanburg, censor, and Drs. G. E. Thompson and William P. Coan, Spartanburg, delegates to the state association.——Greenville County Medical Society, at its annual meeting in Greenville, elected Dr. Ernest W. Carpenter, president; Dr. Charles O. Bates, secretary, and Dr. R. D. Smith, treasurer, all of Greenville.

TENNESSEE

Health Officers to Meet.—An official call was sent out February 7, from the office of Dr. James A. Albright, Nashville, state health officer, for a meeting of city and county health officers of the state in Nashville, April 5 and 6.

Medical Society Organized.—Physicians of Wilson county met in Lebanon, February 5, organized the Wilson County Medical Association, and elected Dr. Thomas O. Bratton, president; Dr. Jerry J. McFarland, vice-president, and Dr. James R. Bone, secretary, all of Lebanon.

Site for Sanatorium Donated.—The Chattanooga City Water Company has donated to the Tuberculosis Sanatorium Association, eighty acres of land near Tyner's Station, on which a tuberculosis sanatorium for the poor of Chattanooga and Hamilton county is to be erected.

Personal.—At the ninth annual banquet of the Sigma Mu Chi Chapter of the Phi Chi Medical Fraternity, held in Chattanooga, February 17, a silver loving-cup was presented to Dr. Hiller P. Larimore on behalf of the fraternity.——Dr. T. A. Kearley has been elected a director of the Methodist Hospital, Nashville.

WISCONSIN

Society Meetings.—At the annual meeting of the Milwaukee Physicians' Club, January 25, Dr. Fred W. Riehl was elected president; Dr. Alexander J. Heller, vice-president; A. A. Cooper, secretary, and Dr. William V. Nelson, treasurer.——Sheboygan County Medical Society, at its annual meeting, January 25, elected Dr. Emil Gunther, Sheboygan, president; Dr. Charles W. Pfeiffer, Sheboygan Falls, vice-president; Dr. William F. Zeirath, Sheboygan, secretary-treasurer; Dr. James R. Kingsley, Sheboygan, censor; Dr. Gilbert H. Stannard, Sheboygan, delegate to the state society, and Dr. Edward Felter, Plymouth, alternate.——The amalgamation of the Milwaukee Medical Society and the Milwaukee County Medical Society is practically assured. Joint conferences have been held, but formal action has not yet been taken.

GENERAL NEWS AND COMMENT

To Replace Fire Loss.—A deficiency appropriation of $367,000 has been recommended to Congress by the Secretary of War, to replace the medical supplies destroyed by fire at the Army Medical Supply Depot, New York City, February 4.

Tuberculosis Sunday.—The National Association for the Study and Prevention of Tuberculosis has announced that April 24 has been selected as National Antituberculosis Sunday, on which day it is planned that sermons on tuberculosis will be preached in all churches in the country.

Railway Surgeons Meet.—The Joint Association of Surgeons of the Illinois Central, Yazoo and Mississippi Valley and Indianapolis Southern railroads held its annual meeting in New Orleans, February 23 and 24, and elected the following officers: President, Dr. John E. Owens, surgeon-in-chief of the Harriman lines, Chicago (reelected); vice-presidents, Drs. Luther Sexton, New Orleans, and Dr. Frank T. Fort, Louisville, and secretary, Dr. Thomas P. Ranney, Chicago. Memphis was chosen as the next place of meeting.——Dr. Charles B. Fry, Mattoon, Ill., the retiring secretary of the association, was presented with a mahogany hall clock by the association.

Medical Societies to Meet.—The Association of American Medical Colleges will hold its twentieth annual meeting at Baltimore, March 21 and 22 in the hall of the Medical and Chirurgical Faculty of Maryland, under the presidency of Dr. George H. Hoxie of the University of Kansas.——The spring meeting of the Medical Society of Missouri Valley will be held in Omaha March 17 and 18. The oration in surgery will be given by Dr. Leonard Freeman, Denver, Colo., on "Local Anesthesia," and the oration in medicine on "The Physical Basis of Mental Diseases" by Dr. Frank P. Norbury, Hospital, Ill. Dr. John E. Summers, Jr., Omaha, is secretary of the committee on arrangements.

Death of a Philanthropist.—James J. H. Gregory, the wealthy seed merchant of Marblehead, Mass., died Feb. 20, 1910. That this item is of special interest to the medical profession lies in the fact that Mr. Gregory is the gentleman to whom we referred on several occasions as one who was distributing the reprints of the "Great American Fraud." Since Mr. Gregory retired from business, he devoted himself to philanthropic work, and among other activities, took great interest in doing what he could against the evils of "patent medicines" and quackery. He recognized the great value of Mr. Adams' book and up to the time of his death had circulated 45,000 copies; even as late as three weeks ago he sent for 1,000 copies.

Atlanta Antivaccinationists.—A noble band of would-be antivaccination martyrs, who were willing and anxious to sacrifice themselves on the altar of principle and smallpox, held a meeting in Atlanta a few days ago. Their dream was rudely interrupted and their pipes put out by Dr. J. P. Kennedy, the vigilant and energetic health officer of Atlanta, who walked into the meeting-place, and catching the eye of the president of the antivaccination society, announced that he

was a health officer and was there for the purpose of seeing that every one present was vaccinated. He was supported in his assault on the sacred rights of personal liberty by a number of police officers. After the martyrs had recovered from the first shock of surprise they became very indignant and the health officer was denounced in no uncertain terms. On taking a census of those present it was found that two-thirds of them were already protected by vaccination and some of them had been vaccinated only recently. Presumably these were loudest in their protests. The names and addresses of those not vaccinated were taken, and after a grand-stand play in the local courts the vaccination will be made unanimous. City Health Officer Kennedy is to be commended for his prompt action in thus forcibly calling the attention of those misguided individuals to the fact that they were not only violating the ordinances of the city, but were endangering the lives of their neighbors and friends by not being vaccinated and by attempting to influence others against vaccination.

FOREIGN

Deaths Abroad.—Among recent deaths reported from Great Britain is that of Dr. Thomas Dixon Savill of London; a consultant of high repute; a nerve and skin specialist, and author of the well-known "System of Clinical Medicine," who died January 10, from skull fracture, the result of a fall from his horse in Algiers, aged 52.

Urologic Society Founded at Bucharest.—A new national urologic society has just been founded at Bucharest, Roumania, with Professor Heresco as the leading spirit. Professor Guyon of Paris, editor of the *Annales des Maladies des Organes Génito-urinaires*, was elected honorary president of the new society at its first meeting.

Ramon y Cajal Made a Senator for Life.—The king of Spain recently appointed Professor Cajal a senator of the realm for life. The prime minister in presenting the name of Cajal for this honor stated "Señor Ramon y Cajal is the greatest glory of the Spanish fatherland." One of the three editors of the *Siglo Medico*, Dr. C. M. Cortezo, is likewise a *senador vitalicio*, as also three other physicians.

Prize for Physiologic Research.—The academy of sciences at Bologna, Italy, announces the foundation of a biennial prize of $600 (3,000 lire) by one of its corresponding members, Prof. Elie de Cyon, with the object of promoting researches in the subjects in which he has done so much important work. Competition is open to the world, and the prize will be awarded for the best work on: 1, the functions of the heart, or cardiac and vasomotor nervous system; 2, functions of the labyrinth of the ear; or, 3, the functions of the thyroid, hypophysis and pineal gland. The prize will be awarded for the first time March 1, 1911. Address the *Segretarie della Classe di Scienze Fisiche della R. Accademia di Bologna*, Via Zanaboni, 33, Bologna, Italy.

LONDON LETTER

(*From Our Regular Correspondent*)

LONDON, Feb. 26, 1910.

Death Under Jonnesco's Method of Spinal Anesthesia

Jonnesco's method of spinal anesthesia has not yet been much used in Great Britain. A death under it has been reported, although its author claimed for it perfect safety. However, the circumstances were unfavorable. A man, aged 60, suffering from valvular disease of the heart, was operated on for strangulated hernia. Spinal anesthesia was induced by the injection of 1½ grains of stovain, dissolved in 17 minims of strychnin solution containing 1/65 of a grain, and the operation was commenced. The patient never lost consciousness, but sank under the operation. Death was attributed to the heart disease, aggravated by the shock of the operation and peritonitis.

The Reduction of Infant Mortality from Diarrhea

The mortality of infants from diarrhea is very high, particularly among artificially-fed infants in whom it is fifteen times greater than in the breast-fed. The mortality is most marked in the manufacturing towns of the North where the demand for female labor in factories causes mothers to abandon suckling. After weaning, there is also a considerable mortality from diarrhea in consequence of improper feeding, and the insanitary conditions of the dwellings of the poor. Evidence is now accumulating that insanitary conditions, such as manure heaps, ashpits, surface soil polluted by drainage, and dirty houses, all play a part in the production of infantile diarrhea. In recent years many agencies, municipal and voluntary, have come into operation for the purpose of instructing mothers in the care of their children and thus preventing the high mortality of infants. Of these agencies, the most important has proved to be women health visitors. These began to be appointed by local health authorities about fifteen years ago, but until recently their numbers have been small. At first their work was wanting in method. They heard of a birth, visited and talked with the mother, and visited occasionally again. But as the registration of the birth of a child need not be made for six weeks, the best opportunity for advice was often lost. In 1907, the Notification of Births Act was passed. This enables a local health authority to render compulsory notification within thirty-six hours to the health officer of all births. This act has now been adopted in many towns and has rendered the work of health visitors much more effective, as they visit the mother at once. A considerable reduction in infant mortality has resulted. For infant visitation, women trained in the nursing of infants, with a knowledge of midwifery and sanitation, are employed. Their visits take the form of friendly advice rather than inspection, and thus they avoid causing hostility among the mothers, who are encouraged to talk about their families and thus enable the visitors to form an estimate of the dangers to which each baby is exposed. The visitors weigh the babies periodically and record the result on cards. One most valuable result of the visits is to raise the proportion of breast-fed infants. Under the mistaken belief that the milk of the mother is insufficient for the infant, breast-feeding is often abandoned. The value of the work may be illustrated by taking the statistics of St. Helens, a large manufacturing town. In 1901, before the system of infant visitation, the percentage of breast-fed infants was 80; in 1901, when the system was in full working it was 95.3. This reduction of the percentage of artificially-fed infants from 20 to 6.7 has been accompanied by a fall in the mortality from diarrhea in infants under 1 year from 59 to 43.2 per 1,000.

PARIS LETTER

(*From Our Regular Correspondent*)

PARIS, Feb. 25, 1910.

The Health of the French Army

In discussing the appropriations for the army, Dr. Lachaud addressed the chamber of deputies on the causes of the morbidity in the army. In the first place, he said, one reason why the German army has 50 per cent. less morbidity than the French is because they have a larger supply to draw from, one recruit out of five men, while in France the recruit is selected from only four or three men. The inspectors are thus compelled to admit men to the military service who are below the average standard. Comparing the French army with the Belgian, where conditions otherwise are much alike, he called attention to the fact that since the barracks in Belgium have had the wooden floors replaced by cement floors, permitting daily cleansing, typhoid fever, measles, mumps and scarlet fever have entirely disappeared from the barracks and they are thus totally free from epidemics. An article recently appeared in a Paris daily, signed by M. F. Masson, a member of the French academy, claiming that the barracks in France are deadly: "*On meurt dans les casernes*" was the title of the article. He arraigned the medical officers of the army as responsible in large part for the high mortality in the barracks, but Dr. Lachaud protested that the army doctors are not responsible; they have to admit men to the service they know are unfit, their advice frequently is not heeded, and their number is too small for the work. Austria has one medical officer to each 238 men, Germany one to 288, Italy one to 294, while France has only one to 421. The total French force enrolled is now 606,303 men; the total number of horses is 141,436, and the horses have one veterinary surgeon to each 264 while the men have only one physician for each 421.

Aid for Medical Sufferers from the Flood

The Paris Society of Medicine has decided not to hold its annual banquet but to take up a special subscription for the benefit of physicians who suffered by the flood, the funds to be distributed directly by the administrative council of the society.

The executive board of the *Syndicat des médecins de la Seine* has voted to extend financial aid to physicians who have

suffered from the flood, loaning money to them without interest, irrespective of whether they belong to the organization or not.

Efforts to Influence Legislation on Medical Matters

The same organization was recently addressed by Dr. Vimont urging the members and physicians generally to confer with the candidates for the approaching elections and present to them the wishes of the medical profession in regard to legislation concerning the free choice of a physician by every citizen, the poor, the insured, the public functionaries, etc., and legislation in regard to medical expert testimony, striving to obtain pledges from the electoral candidates.

Professional Secrecy and the Mutual Benefit Societies

The *Union des Syndicats médicaux de France* has asked the minister of labor for the annulment of a requirement in the statutes of the mutual benefit societies exacting from their physicians a statement of the exact diagnosis of the diseases of their members. The minister has replied that he has just requested the societies in question to erase all such requirements from their statutes. Certainly these societies cannot have considered the bearing of a demand in opposition to the laws governing the medical profession. It was not absolutely necessary to carry the question before the minister of labor; the physicians might have stood on their legal rights and merely have refused to comply with the conditions imposed by the benefit societies.

The *Syndicat médical* of Paris has passed a resolution (1) that the physicians of organizations (benefit societies, municipalities, public and private enterprises, etc.) should not be bound in any case to state the diagnoses of the diseases of their patients; (2) that only the following formula should be used: "morbid state entailing an incapacity for labor of so many days, justifying the payment of the insurance against disease."

Typewriting and Chirography in Prescriptions

Dr. F. Marre recommends the use of the typewriter for prescriptions, especially long ones prescribing complex régimes and prolonged treatments. In such a prescription there are really two parts, one containing the immediate medicinal prescriptions and the other the dietary regulations. The second part, composed rather of advice than of formulas, is just that which the patient ought to be able to read and understand without a shadow of uncertainty. It might easily be typewritten at leisure from notes taken at the bedside of the patient, and would thus be complete, clear and easy to read; moreover, a duplicate, to be retained by the physician, could be easily made. Prescriptions for immediate use would continue, as in the past, to be made out by hand; but they should be always simple and short, containing not more than a paragraph as a rule. The danger of errors would thereby be much reduced.

The Increase of Medical Fees Recognized in the Courts

The Federations of the Physicians of Paris and of the Seine a few months ago decided to increase medical fees (THE JOURNAL, Nov. 6, 1909, liii, 1576). It is interesting to note that in a case which dealt with the rates of medical fees, tried in a local court of Paris, the judge took as a basis the scale fixed by the medical societies.

A Recent French Recipient of the Mary Kingsley Medal

The Liverpool school of tropical medicine has just awarded the Mary Kingsley medal to Dr. Raphael Blanchard, professor of parasitology and of medical natural history at the Paris college of medicine, in recognition of his services to the study of tropical medicine. Up to the present Professor Laveran has been the only French recipient of this high honor. Among the other recipients of the medal have been Lord Lister, Sir Patrick Manson, C. Finlay, D. Bruce, W. A. Haffkine, and Robert Koch.

Death of Prof. A. Bordier

Dr. Arthur Bordier, professor of natural history at the medical school of Grenoble, has just died, aged 69.

Honors for Medical Centenarian

Dr. J. C. Boullé of Saint-Valérian (Yonne) celebrates his hundredth birthday March 3 and the municipality is organizing imposing festivals in his honor on that date. His health is perfect.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Feb. 17, 1910.

Personal

Professor Olshausen will resign his position as director of the first gynecologic clinic of the Berlin university at the end of the summer semester. This determination is readily understood when we remember that Olshausen is 75 years old. Various persons have repeatedly expressed their astonishment that so old a man should still continue to operate. However, Olshausen has so far enjoyed unusual vigor and so it is quite excusable that he has been slow to consent to a cessation of his activity.

Professor Windscheid died a few days ago at Leipsic, aged 48, of intestinal cancer. This man so early deceased was distinguished as an investigator and teacher of nervous diseases, especially those due to traumatism. His death will also be sincerely regretted on account of his character.

Warning Against the Use of Raw Meat

As your readers will remember, about two years ago there occurred in the Rudolf Virchow Hospital an epidemic of meat poisoning which was referable to the use of raw ground meat. Under the authority of the department of education the scientific commission for medical affairs has taken up this matter and its report of the causes of the epidemic and the measures to be taken against it has just been published. The epidemic was due to the use of raw meat which had been infected with the bacteria of enteritis in some unexplained way and these bacteria had probably multiplied in the raw meat. Hence the commission warns against the use of raw meat and especially of raw ground meat. The supplying of raw meat as a foodstuff for institutions like hospitals and prisons is earnestly advised against. In accordance with this report the minister has required his subordinate officers to use their efforts to prevent the future use of raw meat as a foodstuff in such institutions.

International Exposition of Hygiene in Dresden

The preparations for the international exposition of hygiene for 1911 are already in active progress. On February 12 about 200 hygienists assembled in Dresden for a conference, among whom were the representatives of most civilized nations and the presidents of the various departments and sections. According to a report of the president of the directory of the hygienic exposition, privy counsellor for commerce Lingner (better known as the manufacturer of Odol), the exposition will include five departments: historical, scientific, popular, industrial and athletic. A systematic representation of the entire science of hygiene is to be furnished by the exposition. The historical department, the supervision of which has been accepted by the medical historian, Professor Sudhoff, will exhibit the history of hygiene from the earliest antiquity to the beginning of the last century. In the athletic department all forms of sport will be exhibited. An attempt is to be made in a scientific way to show the influence of athletics on the various organs experimentally, and for this purpose a special laboratory is being established. It is to be shown in this department that excessive athletics should be opposed and how this is to be done. Athletic competitions are to be held. Six hundred prominent firms have already signified their intended representation in the industrial exposition. The kingdom of Saxony and the capital, Dresden, have appropriated $125,000 (500,000 marks) for the exposition. President Lingner has himself contributed a not inconsiderable sum.

Collective Investigation by the Imperial Health Office on Tuberculosis from Milk

The imperial health office in Berlin has ordered a collective report on the question what danger is imminent to man from the use of milk and milk products from cows with tuberculous udders and as a result of the official reports from the various states Weber has published an interesting report in the last number of the journal, *Tuberculosis Researches from the Imperial Health Office*. From the beginning of 1905 to April, 1909, 113 cases of tuberculosis of the udder were reported to the health office; 628 persons had used the milk of these cows, mostly for a long time. In 69 cases the milk and milk products were consumed raw, altogether by 360 persons, of whom 159 were children. Of these 360, five were indubitably infected with tuberculosis through the use of

the milk; among them two children between one and two years of age. In both cases the tuberculosis of the udder was very extensive. The children had taken the milk of these cows from one to one and a half years. In both cases the milk was used raw by all the members of the family, the parents and several children; all these people remained healthy. In the sick children there was merely an affection of the cervical glands in which tubercle bacilli of the typus bovinus were demonstrated by bacteriologic tests. There were no other symptoms. In addition to these positive determinations there were a number of doubtful cases reported in which there was a suspicion of a perlsucht which could not, however, be confirmed by bacteriologic investigation. In other cases the disease suspected to be tuberculosis was certainly demonstrated to be not tuberculosis. Among the 268 persons who used the boiled milk of cows with tuberculous udders, swelling of the cervical glands was found twelve times among 133 children and once among 135 adults; the number suspected of tuberculosis is relatively higher than among those who had used the milk raw. Finally Weber comes to the conclusion: The danger which threatens man through the use of milk and milk products of cows with tuberculous udders is very small compared with that which the man affected with open pulmonary tuberculosis imposes on his associates. The collective investigation of the imperial health office sustains therefore the view of Robert Koch that in the campaign against tuberculosis measures against the conveyance of the disease from man to man play the most important part.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Feb. 15, 1910.

The Distribution of Practitioners in Austria

A report of the official statistic committee contains a few figures which well illustrate the amount of work thrown on the shoulders of the "*Amtsarzt*" (the officer of health) and explains also why the financial position of physicians in Austria is not an enviable one. There were altogether, in 1908, not more than 12,050 graduated physicians in Austria itself (without Hungary) for a population of 29 millions or one physician per 2,500 inhabitants. Nearly 70 per cent. of these held public or municipal or corporation appointments; 18 per cent. were appointed by the state, 48 per cent. by public municipal bodies, the rest by the *Krankenkassen* (sick clubs) and other corporations. The distribution in cities was far from satisfactory from the standpoint of the income of the doctor; the figures are: one doctor for 300 inhabitants in Prague, for 500 in Graz, for 600 in Vienna, for 1,000 in Trieste. In the country districts the outlook is better. The general practitioner could reckon with from 2,000 to 3,000 persons as possible patients in 30 per cent. of the districts. But in the other districts it is quite different. In 20 per cent. the figures were one doctor for from 3,000 to 6,000 persons, in 25 per cent. there were from 6,000 to 10,000 inhabitants dependent on the services of one doctor, while there were 13 per cent. of the country districts where the number of such persons was between 13,000 and 17,000. Of course such conditions make it impossible to render the services in such a manner that it would satisfy both physician and patient, especially as often this physician is also an officer of public health too, whose duties encroach on his time for private practice. The impossible conditions are the more visible if one considers the area which the doctor is expected to "serve." While in some districts there is one doctor to every half a square mile (altogether in 4 districts) in 3 per cent. there is one doctor per 2 square miles, in 28 per cent. one doctor for 6 to 10 square miles, in 25 per cent. one doctor for from 10 to 20 square miles, in 35 per cent. one doctor for from 20 to 30 square miles, and there are even districts where in an area of nearly 40 square miles, one cannot find a doctor in case of need. The explanation for such an uneven distribution of medical men is to be found in the poverty of the rural population, who cannot afford to pay the doctor in a way which would induce able men to settle down among them more densely. Very aptly Professor Fraenkel puts it that the state takes better care of the spiritual welfare of its citizens than of their health, for in every village or parish, a chapel with a priest is indispensable. Nevertheless, the number of medical students is increasing, for the prospects to obtain an appointment are better now, it must be conceded, than they were before, and the wealth of the population is also increasing, although slowly. The new sickness insurance act, which will become law in a few years' time at the utmost, will necessitate the appointment of at least 1,200 new doctors, or about 10 per cent. of the entire number of practitioners, roughly speaking.

Miscellany

The Action of Radium on the Tissues.—The experiments of G. Guyot (*Centralbl. f. allg. Path. u. path. Anat.*, xx, 243, 1909) tend to show that the first action of radio-activity is one of stimulation of the vitality of the cells of the epidermis and of the fatty glandular tissue, which leads to a hyperplasia of these tissues. Soon, however, retrogressive processes set in. The entire process is one of acceleration of the normal cycle of cell activity in the epidermis. The normal slow replacement of the superficial cells by new cells from the germinal epithelium is greatly hastened by the stimulation of the radium rays, and there results an overproduction of cells and a consequent rapid involution in the newly formed cells. Within a short time the germinal epithelium seems to become exhausted and there follows a halt in the germination of new cells, while the rapid involution of the recently formed cells and the natural death of the more peripheral ones continue. This, as is evident, leads to a complete extermination of the epidermis. The muscular tissues seem to be particularly resistant to radio-activity. The experiments were carried out on mice. The animals were placed in a lead-lined satchel in an opening in the lid of which the metal capsule containing the radium was placed. The exposure lasted as long as forty-eight hours and the animals died from three days to seven months after exposure.

The Problem of the House Mosquito.—In New Jersey the work done in the salt marshes since 1904 has practically eliminated the migratory species of mosquito, says Smith (*Bull. 216, New Jersey Agricultural Exper. Station*, November, 1908), but the local breeding house mosquito still annoys to a greater or less extent, depending on favorable conditions of season and moisture. It breeds in one or two weeks in every conceivable sort of place where there is even the smallest quantity of stagnant water, and its extinction depends on constant vigilance in destroying its breeding-places. The impregnated female hibernates in cellars, garrets, cold rooms, dark and sheltered places, hollow trees, under loose bark, and even in burrows or holes in the ground. In the spring the eggs are laid on the surface of water and soon hatch. In cellars and similar inclosed places they may be killed by fumigation with phenol and camphor or by burning stramonium. All cisterns, rain-barrels, etc., should be kept covered and all pools drained and filled, or covered with oil. Even sewer catch-basins afford breeding-places for them and these should be looked after. In New Jersey water in which mosquito larvæ breed is declared by statute to be a nuisance; local boards of health are given power to abate it and their orders may be enforced against municipalities as well as individuals.

Pneumococcus Colitis with Hyperpyrexia.—Porter, Mummery and W. Hale White (*Proc. Royal Soc. Med.*, December, 1909) report the case of a woman aged 31 suffering from a severe diarrhea with the passage of a considerable quantity of blood. Examination with the sigmoidoscope revealed a red, spongy mucous membrane with obvious oozing of blood. A diagnosis of acute hemorrhagic colitis was made. An appendicostomy was performed and the hemorrhage stopped by astringent irrigations through the appendix. Twelve hours after the operation the temperature was 105.6 F. and ran rapidly up to 109 in spite of sponging with ice water. Continued sponging and irrigation through the appendix with cold water brought the temperature down in the course of two hours to 100, and it later fell to 95, but the next day shot up again to 107. By the above methods it was kept between 101 and 103 until the twelfth day after the hyperpyrexia when the patient died. An examination of washings from the bowel with plain water showed *Bacillus coli* and other colon organisms, and pneumococci which were isolated and grown in pure culture, and to the latter organism was attributed the colitis. The lungs remained healthy, there were no cardiac murmurs, nor evidence of pneumococcus infection in any other part of the body.

Pharmacology

CACTUS GRANDIFLORUS

Report of the Council on Pharmacy and Chemistry

The Council voted that cactus grandiflorus should not be accepted for New and Nonofficial Remedies, and that a statement be prepared for THE JOURNAL giving the reasons for this action. Accordingly the following report has been adopted by the Council and its publication authorized.

W. A. PUCKNER, Secretary.

CACTUS GRANDIFLORUS

The therapeutic value of this plant has been variously estimated by different observers. Experimental evidence as to its action is scanty and no complete chemical examination has ever been made.

Reputable men have testified that some of the plants of the cactus family contain very active principles, but so far experiments seem to prove that cactus grandiflorus has neither the action of digitalis nor that of strychnin. The principal contributions, clinical and experimental, for and against the drug, are set out below.

EXPERIMENTAL EVIDENCE

O. H. Myers[1] worked with a product which he calls cactina and which he regards as the active principle of the drug. (As no such substance as cactina is described in any materia medica, it is impossible to state what Myers really used.) He found that it had a strychnin-like action and raised the blood pressure.

Hatcher comes to the conclusion: "Either Myers' work was a pure fabrication or he was dealing not with cactin but with a substance similar to the pellotin of Heffter, the action of which resembles that of strychnin to a certain extent."

E. Boinet and J. Boy-Teissier[2] experimented with an aqueous extract, an alcoholic extract, and with an alkaloid which they call "cactine." They concluded from three sets of experiments on frogs that extract of cactus produces, in ten minutes, a temporary increase in the heart's action which frequently repeated doses are required to maintain; and that large doses slow the heart and produce arrhythmia.

L. E. Sayre[3] experimented with a preparation of cactus, made from the stem of the plant, by injecting it into the dorsal lymph space of the frog. There was seemingly an increase in the amplitude of the heart's action and an indication of a strengthened beat or increased force.

R. A. Hatcher[4] states that it is possible that cactus grandiflorus, under certain conditions, may contain a principle with a strychnin-like action. But Hatcher made 10 experiments on frogs, 4 on cats, 6 on dogs, 2 on rabbits, and 1 on a guinea-pig, with Cactina pillets of the Sultan Drug Company and the cactin of the Abbott Alkaloidal Company. From 1 to 15 pillets in frogs and up to 25 in dogs were used at each dose. In no single instance was there any evidence of a digitalis-like or strychnin-like action, or, in fact, of any decided action of any kind whatever.

Gordon Sharp[5] was unable to obtain either alkaloid or glucosid from the plant, but found a series of resins that caused contraction of the blood vessels of a frog. This was not a digitalis-like contraction, but depended, he believed, on simple acidity. On the heart of the frog the resins have little or no effect, comparisons being made with digitalis in the same animals. There is no proof that cactus grandiflorus itself shortens diastole, or in fact, that it has any special action on the heart muscle at all. Sharp experimented on himself with large doses of an extract made with alcohol 1 to 5, but got no noticeable results. He thinks that the plant may have some slight diuretic action.

Sayre submitted the preparation which he used in his experiments for more careful testing to E. M. Houghton, who reported that it had practically no action on the heart.

In commenting on Houghton's results, Reid Hunt said that they were confirmed by his own experiments. He did not deny, however, that the drug might have some therapeutic effect and that, in very large doses, it did affect the kidneys.

S. A. Mathews[6] found one preparation of cactus (cactin—Abbott) absolutely inert so far as any effect on the heart is concerned. He found that cactina (Sultan Drug Co.) in very large doses depressed both the circulation and respiration. In this regard it differs from strychnin, and it has no resemblance to the action of digitalis, strophanthus or any of the heart stimulants. A dose of from 10 to 12 pillets administered intravenously to a 10 to 12 kg. dog exerted little or no influence on the heart or circulation; the larger dose may cause a slight fall in blood pressure. When 70 or more pillets were administered within two and a half hours the animal generally died.

The work of Boinet and Boy-Teissier also has been criticized by Hatcher on the ground that their most positive results were obtained with an alkaloid which no one at this day is able to prepare. The results quoted in this report, however, were obtained by the use of extracts of cactus so that it does not seem that they should be entirely rejected, whatever their value may be.

CLINICAL EVIDENCE

Clinical observations have been more abundant than exact, and a favorable action of the drug in some organic diseases of the heart has been reported; other observers would limit its use to functional arrhythmia, insisting that it is not a substitute for digitalis or aconite, but that it occupies a place distinct from either of those remedies.

P. W. Williams[7] recommends cactus for functional heart disease, but, as a rule, found it useless in organic disease. He thinks it one of a class of remedies which act on the accelerator nerves and sympathetic ganglia, shortening the diastole and stimulating the spinal vasomotor nerve centers. Williams apparently relied on Myers for his knowledge of the pharmacologic action, and his paper is a fair example of the clinical studies of cactus.

Ellingwood[8] claims that cactus is a cardiac tonic, acting on the accelerator nerves and heart ganglia, increasing muscular force and arterial tension. He recommends it in both organic and functional diseases.

Boinet and Boy-Teissier found that therapeutic doses of forty drops of tincture of cactus were without effect on the normal heart. In patients with noisy asystole (*asystolie bruyante*) the same dose produced no appreciable effect. In the period of latent non-compensation of true cardiac patients, from 80 to 100 drops a day increased the force of the failing heart. In patients with secondary heart disease with arrhythmia of nervous origin, daily doses of 80, 100 and 120 drops of the tincture were well tolerated for weeks; they seemed to increase the fulness of the pulse and regulated its rhythm. In spite of such large doses these observers never noticed any symptoms that could be attributed to a cumulative action. It must be remembered that the precise preparation of cactus which they used is not known.

Aulde[9] recommends it as a cardiac tonic free from cumulative effects.

Gordon Sharp says: "The therapeutics of the subject, I think, are clear enough. Cactus grandiflorus cannot be included in our list of cardiac drugs. It is not even a simple stomachic tonic and at most all one can say is that it has small diuretic action."

Hatcher says: "Clinical testimony is so conflicting that between the extreme views of Gordon Sharp and those of Ellingwood there is room for an honest difference of opinion concerning cactus grandiflorus."

1. New York Med. Jour., 1891, liii, 681-683.
2. Bull. Gen. de Therap., 1891, cxxi, 343-349.
3. Am. Pharm. Assn., 1906, liv, 405.
4. THE JOURNAL A. M. A., Sept. 21, 1907, pp. 1021-1024.
5. Practitioner, London, 1894, lii, 444-446.
6. THE JOURNAL A. M. A., March 21, 1908, l, 956-958.
7. Practitioner, London, 1891, xlvii, 266-273.
8. Med. Rec., New York, 1905, lxvii, 857.
9. Practitioner, London, xlvii, 223; Therap. Gaz., 1890.

Matthews himself took 100 granules of cactin (1/67 gr.—1 mg. each), 25 every four hours, without experiencing the least effect.

CONCLUSIONS

Reliable conclusions regarding the therapeutic use of cactus grandiflorus are rendered difficult on account of several factors.

1. It is uncertain what part of the plant contains the active principle if one exists; and its nature is unknown. The National Standard Dispensatory states that its "activity must be confined to the flower in some special stage of its development or to a certain part of it or to some parts gathered with it." This uncertainty may explain the negative results obtained by some observers but it makes the drug one that cannot be generally relied on and gives an excellent opportunity for the exploitation of proprietary preparations.

2. Some of the experimental work and much of the clinical evidence has been obtained and published under proprietary auspices. For this reason many of the therapeutic claims made for the drug must be viewed as merely the reflection of the exaggerated statements made by the advertisers of proprietary preparations.

3. The value of clinical evidence when unsupported by animal experimentation is much diminished by the tendency of enthusiastic and untrained observers to attribute to the drug given the effect really due to general remedial measures, psychic suggestion and so forth. While it must be admitted that valuable remedies may exist whose therapeutic properties cannot be revealed by animal experimentation, yet in the absence of such experimental evidence conclusions should be drawn with extreme caution.

Bearing these conditions in mind, the following statements seem to be justified: (*a*) The botanical, chemical and pharmaceutical properties of cactus are not sufficiently determined to make any available preparation a reliable remedy. (*b*) There is some evidence that cactus may be capable of affecting the animal heart and nervous system, but its action is not that ordinarily attributed to it. It does not increase the force of the heart beat. (*c*) While there is some clinical testimony as to its usefulness in functional diseases of the heart, the indications for its administration are at present too uncertain to afford a safe basis for recommending it.

4. While the drug may be deserving of further experimental and clinical investigation, this should be carried on in reliable pharmacologic laboratories and in clinics provided with facilities for exact observation.

HABITINA

A "Morphin Cure" that Makes Drug Fiends

A chapter in the Great American Fraud entitled "The Scavengers" deals with those individuals who claim to cure the drug habit by mail. Mr. Adams apostrophizes them thus:

> "At the bottom of the noisome pit of charlatanry crawl the drug-habit specialists. They are the scavengers, delving amid the carrion of the fraudulent nostrum business for their profits. The human wrecks made by the opium- and cocain-laden secret 'patent medicines' come to them for cure, and are wrung dry of the last drop of blood. By comparison with these leeches of the uttermost slime, the regular 'patent medicine' faker is a pattern of righteousness. . . . They deliberately foster the most dreadful forms of slavery, for their own profit. They have discovered a money-making villainy worse than murder, for which, apparently, there is no legal penalty."

Of the "cures" themselves he says:

> "Practically all of these advertised remedies are simply the drug itself in concealed form. No effort is made to save the patient. The whole purpose is to substitute for the slavery to the drug purchased of the corner pharmacist the slavery to the same drug, disguised, purchased at a much larger price from the 'Doctor' or 'Institute' or 'Society.'"

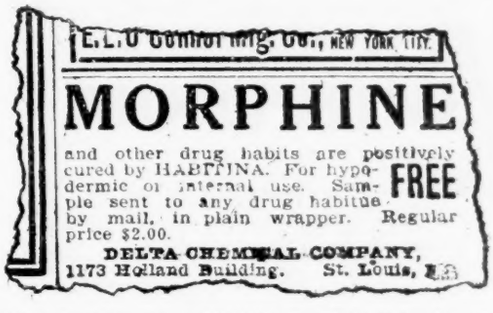
One of these vicious and dangerous "cures" is "Habitina," a nostrum advertised by the Delta Chemical Co., of St. Louis, for the "positive cure" of the "morphin and other drug habits." The Delta Chemical Company is, according to reports, practically owned by one Ryland C. Bruce, who was previously in the insurance business; the "chemical company" is said to have its preparation put up by other houses according to demand.

A few of the claims made for "Habitina" are:

"An Antidotal, Eliminative and Supportive Compound."
"Does not Poison the System Like Plain Morphin."
"Gives Pleasant Stimulation and Perfect Support from First Dose."
"A Gradual Reduction Treatment for all Pain-Alleviating and Sleep-Producing Drugs."

The advertisements state that a "free sample" of this "cure" may be had on application; and this is true. Those writing for it receive a half-ounce bottle of liquid containing eight grains of morphin sulphate and four grains of heroin hydrochlorid.

This means that under the present lax state of affairs any man, woman or child who cares to go to the trouble of writing for this stuff can, at a total expenditure of two cents, get enough morphin to kill seven or eight people. There is not a reputable drug store in the United States that would dare to give a layman eight grains of morphin on no other authority than his simple request. Yet the human vultures that carry on this body- and mind-destroying traffic in "drug cures" are permitted under our present laws—or lack of laws—to put


MORPHINE
and other drug habits are positively cured by HABITINA. For hypodermic or internal use. Sample sent to any drug habitue by mail, in plain wrapper. Regular price $2.00.
FREE
DELTA CHEMICAL COMPANY,
1173 Holland Building. St. Louis, Mo.

A typical advertisement of "Habitina." While it implies that free samples will be sent only to drug habitués no such discrimination is made in scattering this deadly poison.

into the hands of the ignorant or the criminal, for the mere asking, the most dangerous and treacherous of poisons.

Probably only those physicians whose work brings them in daily contact with the pitiful wrecks resulting from the misuse of narcotics can appreciate to the full the ghastly irony of the claims made by the purveyors of this poison that "Habitina is intended strictly as a treatment and not as a substitute." What actually occurs is well shown in the report of a case of blindness resulting from the use of this dangerous nostrum that appears on another page.[1] Here, the patient before taking "Habitina" was ingesting 6 grains of morphin daily; after taking this "morphin cure" she was taking 16 grains of morphin and 8 grains of heroin a day. A "Gradual Reduction Treatment" indeed! Another physician wrote to THE JOURNAL regarding some patients who had taken "Habitina:"

> "These patients are in worse mental condition than before; without 'Habitina' they are miserable and *cannot derive satisfaction from even twice the dose of morphin.*"

Such results may be expected when morphin habitués attempt to cure themselves with a "remedy" that is itself loaded with morphin and heroin. That poor helpless wrecks of humanity are daily being dragged down still deeper into the slough of despond by this damnable product cannot be doubted. Why can such things be? Because of the insatiable greed on the part of the few who engage in this villainous traffic, and of the intolerable negligence on the part of the many who stand idly by and make no effort to enact laws that shall stamp it out.

1. Stieren, E.: Blindness from Heroin in the Nostrum Habitina, p. 869, this issue.

List of Additional Pharmacopeial Delegates

Dr. Murray Galt Motter, secretary, Washington, D. C., sends the following list of delegates to the Pharmacopeial Convention of 1910, supplementary to that in THE JOURNAL, Feb. 26, 1910. He states that it is offered for publication "without prejudice," it being understood that such publication does not of necessity mean that these delegates will be received and seated by the convention, as their credentials have not yet been passed on by the Committee on Credentials and Arrangements.

Attention is invited to a ruling of the Committee on Credentials and Arrangements, that it can "not recognize the right of any one individual to represent more than one organization or institution."

HOWARD UNIVERSITY MEDICAL COLLEGE, DISTRICT OF COLUMBIA.—William H. Seaman, John W. Mitchell, J. Herve Purdy; alternates, D. S. Lamb, Collins Marshall.

HOWARD UNIVERSITY PHARMACEUTIC COLLEGE.—Paul Bartsch, George N. Perry, Herbert C. Scurlock; alternates, Edgar B. Keener.

GEORGIA PHARMACEUTICAL ASSOCIATION.—Max Morris, George D. Case, R. L. Palmer.

SOUTHERN COLLEGE OF PHARMACY, ATLANTA.—R. C. Hood, H. Crenshaw, William B. Freeman; alternates, J. N. Brawner, G. M. Niles.

HIGHLAND PARK COLLEGE OF PHARMACY, DES MOINES, IOWA.—O. H. Longwell, S. R. Macy.

KENTUCKY PHARMACEUTICAL ASSOCIATION.—C. Lewis Diehl, L. A. Broan, James H. Martin; alternates, James O. Cook, G. Orville Patterson.

LOUISIANA STATE PHARMACEUTICAL ASSOCIATION.—Philip Asher, P. C. Godbold, Adam Wirth; alternates, J. A. Lengendre, A. O. Kaczoroski, M. T. Breslin.

NEW ORLEANS COLLEGE OF PHARMACY.—M. T. Breslin, C. D. Sauvinet, A. O. Kaczoroski; alternates, A. di Trapani, John E. Scott, George W. McDuff.

MAINE PHARMACEUTICAL ASSOCIATION.—Charles H. Davis, Frank R. Partridge, E. S. Everett; alternates, George O. Tuttle, Frank T. Crane, H. D. Pennell.

BALTIMORE MEDICAL COLLEGE.—William Caspari, Charles O'Donovan.

COLLEGE OF PHYSICIANS AND SURGEONS, BOSTON.—Ephraim Cutter, I. E. Leonard, Charles Edward Buck.

MASSACHUSETTS STATE PHARMACEUTICAL ASSOCIATION.—Charles F. Nixon, Ernest O. Engstrom, F. A. Hubbard; alternates, L. G. Heimitz, Walter S. Doane, L. A. Lamson.

MASSACHUSETTS COLLEGE OF PHARMACY.—Elie H. LaPierre, Irving P. Gammon, Julian W. Baird; alternates, Herman Heinritz, C. Herbert Packard, William H. Glover.

MICHIGAN STATE PHARMACEUTICAL ASSOCIATION.—Leonard A. Seltzer, J. M. Francis.

UNIVERSITY OF MICHIGAN, SCHOOL OF PHARMACY.—Walter H. Sawyer, J. O. Schlotterbeck, A. B. Stevens; alternates, S. Lawrence Bigelow, O. C. Johnson, E. D. Campbell.

MISSISSIPPI STATE MEDICAL ASSOCIATION.—S. Myers, P. M. Rowland; J. A. S. Bennett.

MISSOURI STATE MEDICAL ASSOCIATION.—O. A. Wall, R. T. Sloan, J. Block.

UNIVERSITY OF MISSOURI, SCHOOL OF MEDICINE.—W. O. Emory, H. D. Shantz, W. H. Schultz.

WASHINGTON UNIVERSITY MEDICAL SCHOOL.—Henry M. Whelpley.

NEW JERSEY COLLEGE OF PHARMACY.—Rudolph Breeves, Adolph Marquier, J. C. Gallagher; Alternates, William O. Kuebler, Albert Plaut, Philemon E. Hommell.

NEW MEXICO MEDICAL SOCIETY.—C. Taylor Goodman, C. G. Duncan, G. K. Angle; alternates, A. L. Breeding, F. F. Doepp, H. M. Smith.

CORNELL UNIVERSITY MEDICAL COLLEGE.—Robert A. Hatcher, Alexander Lambert, Warren Coleman.

NEW YORK COLLEGE OF PHARMACY.—Albert Plaut, George C. Diekman, Henry H. Rusby; alternates, Thomas F. Main, C. O. Bigelow, William Mansfield.

JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA.—H. A. Hare, J. W. Holland, H. A. Thornton; alternates, Oscar Wilson, Leighton F. Appleman, Alfred Heineberg.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA.—Arthur A. Stevens.

TEMPLE UNIVERSITY, MEDICAL DEPARTMENT.—Horace Binney Morse, Mervyn, Ross Taylor, Earl L. McDaniel; alternates, B. E. Rogers, R. S. Dorsett, G. M. Illman.

ALLEGHENY COUNTY MEDICAL SOCIETY.—Thomas Turnbull, Jr. William J. McAdams, A. J. Barchfield; alternates, J. C. Burt, T. W. Grayson, A. R. Matheny.

PHILADELPHIA COLLEGE OF PHARMACY, ALUMNI ASSOCIATION.—Charles H. LaWall, E. Fullerton Cook, Joseph W. England; alternates, Clement P. Lowe, W. L. Cliffe.

RHODE ISLAND MEDICAL SOCIETY.—William J. McCaw, Charles W. Higgins, Simeon Hunt; alternates, William E. Wilson, James F. Duffy, George W. Bailey.

SOUTH CAROLINA MEDICAL ASSOCIATION.—C. P. Aimar, C. L. Napier.

TENNESSEE PHARMACEUTICAL ASSOCIATION.—Richard Smith, Samuel C. Davis, J. O. Burge; alternates, R. White, F. Ward, D. Rosenthal.

TEXAS STATE MEDICAL ASSOCIATION.—C. L. Milburn, S. J. Francis, W. Clarence Kluttz.

TEXAS PHARMACEUTICAL ASSOCIATION.—J. C. Buckner, E. G. Eberle, Herman Nester.

VIRGINIA PHARMACEUTICAL ASSOCIATION.—C. B. Fleet, John E. Jackson, Gordon Blair; Alternates, H. C. Littlejohn, George T. Mankin, C. D. Fox.

Correspondence

An Attempt to Blackmail Physicians

[The following communication concerning an attempt to blackmail physicians is published with a two-fold purpose. Its publication will cause physicians to be on their guard against similar schemes, which may be attempted in any community, and it will serve as a caution to physicians, in view of the fact that the laity is inclined to believe that physicians sometimes recommend operations when they are not needed.—ED.]

To the Editor:—There has been bad feeling between many of the physicians of Racine and the Kradwell Drug Company, the cause of which or who is at fault has no particular bearing in this case. In this letter I want to show how a blackmailing scheme, intended to be operated over a broad extent of this country was nipped in the bud.

March 28, 1909, a man introducing himself as James Rounds came into my office and said he feared he had appendicitis. I examined him and found his temperature normal and pulse 80. His actions were peculiar. I thought perhaps he had taken morphin for pain. I could discover no objective symptoms, but he claimed there was a marked tenderness on pressure at McBurney's point. I informed him that if he had had appendicitis, he was over the acute stage, and by going to the hospital for a few days, under close diet, he would probably get over this attack without an operation. He gave a history of repeated attacks, each of which laid him up from a week to ten days, and stated that he wished to have an operation and avoid further attacks. He informed me that on account of trouble with his wife and brother-in-law his money was tied up, but that if a letter were written explaining his condition the brother-in-law would send the money to pay for an operation. I wrote the letter. In a few days I found that three other physicians, Dr. S. C. Buchan, Dr. G. Bjorkman and Dr. L. E. Fazen had been visited by the same person and they had written similar letters, his stories varying a little, but always giving a history that indicated appendicitis.

We had all heard rumors through leaks from the Kradwell Drug Company of something that was to be done to the erring doctors. Nothing, however, was heard directly until Nov. 17, 1909, when the above mentioned doctors and myself received the following letter, with an inclosed clipping[1] from a newspaper:

Chicago, Ill., Nov. 17, 1909.

Dr. Bjorkman, 704 Park Ave., Racine, Wis.:

Inclosed you will find an article from the *Chicago Record Herald* of Nov. 13, 1909. This will doubtless recall to your mind, the 28th of March, 1909, when you examined one James Rounds at your office, Racine. You will no doubt remember, that three days after the examination you gave a signed statement to the effect that an immediate operation of my appendix was necessary, showing your intention of operating in case the fee was guaranteed. You may not be surprised that your opinion was contradicted within two days after your examination by several reliable physicians in Racine and Chicago. The accompanying article will show you why you was given a chance to examine Mr. Rounds. Being the principal in this case, the result of my investigation in Racine is in my possession. If you would be interested in having your statement and result of my investigation withheld from publication, you may communicate with Theodore Marrin, Private Secret Service Operator, 159 East Erie Street, Chicago.

P. S.—Theodore Marrin and James Rounds are the same man.

The letters were practically the same and were all turned over to the United States postal authorities, but were hardly deemed strong enough to convict the writer. Correspondence was carried on with Marrin and arrangements were made by me to meet him at the Great Northern Hotel, December 6. I went to the hotel as arranged, registered, and went to the room provided for me by the postoffice inspectors, who were in an adjoining room.

In about fifteen minutes Marrin came in and identified himself by the letters written to him. He told me what has since been confirmed by G. V. Kradwell on the witness stand, that he was introduced to the Kradwell Company by Clarke Helme Loomis, and engaged by them to investigate certain doctors. He further told me that there were two lists, the

1. Editor's Note: The article referred to is a sensational one based on an alleged interview with Dr. G. G. Burdick, Chicago, who was quoted as saying that many patients have been operated on by physicians to correct ailments, particularly appendicitis, which they never had, and that the operations sometimes consist only in an incision in the skin and no complete operation is performed. This is done, it was charged, not through a mistake in diagnosis, but for the purpose of making business.

physicians that he was to get evidence against and the ones that were favorable to the Kradwell Drug Company, and that his instructions as to what he should tell the physicians on each list were different. The ones he was to get evidence against were Doctors Buchan, Bjorkman, Pope, Collins, Fazen, Taylor, and he thought Nott, and he said boastingly, "I got every one that I went after." Drs. DePierre, Williams, Brown and McNitt were not on the list. In fact, Loomis went to McNitt and Brown with Marrin.

To substantiate his statement, that his instructions were different in regard to the two lists, he showed me a letter from Loomis, reading as follows:

Racine, Wis., April 20, 1909.

Mr. Theodore Marrin, 363 E. Ohio St., Chicago, Ill.

Dear Sir: I am enclosing herewith letter which will introduce you to A. J. Ochsner, M.D., 710 Sedgwick St., Chicago. This is the other physician that I spoke about, and I would like you to go and have yourself examined by him as per our conversation. You need not try to mislead him by statements as to your condition, as in that case he might become suspicious and not make the examination at all—or not give me any report on same. He will send his report direct to me. The time to see him will be between four and six o'clock any day, but if you will call him up and make an appointment you will not have to wait to see him when you do call. Please attend to this as soon as possible and oblige.

Very truly yours,

CLARKE HELME LOOMIS.

Dr. DePierre was at that time (1909) doing business with the Kradwell Drug Company, but since he is not so closely associated with them. I asked Marrin why the Kradwells had not published the letters. He answered that they were afraid to do so, as they had been told by their friends that it would hurt their business.

The last day Marrin was in the employ of the Kradwells in Racine he was instructed to get T. W. Thiesen, of the Red Cross Drug Company, Kradwell's strongest competitor. He represented himself as Dr. Hanson, of Chicago, who wished to locate in Racine, became confidential, and told Mr. Thiesen of the large commissions the Kradwells had offered him, but Mr. Thiesen told him he had better stay by the Kradwells.

I asked Marrin how much he wanted to keep the matter quiet and keep it out of the papers. He wanted me to set a price, but I could not do it, so he agreed to take $600 from four of us, $150 from each, and if the money was not paid he would publish the letters in the Racine papers. If they refused to publish them he would publish them in the *Chicago American* and would distribute them thoroughly in Racine. If I paid him, he would omit my name and only publish the letters of those who did not pay him. I informed him that his telegram came after banking hours, that I only had a letter of credit on New York, which I showed, and $50 in cash, but that I could give him a check. This he did not want, so I told him I would give him $40 on account. He said he was of a very suspicious nature, and looked under the bed and in the closet before taking the money, which was marked. He folded it and put it in his pocketbook and the pocketbook in his pocket. Just then Inspector Mullen came in from the next room. Marrin tried to get rid of the money, but didn't have time. I opened the door and let Inspector Germer in from the hall. Marrin admitted writing the letters and was taken to the federal station, underwent an examination, and was brought before the grand jury the next day and promptly indicted.

His case was called for trial Dec. 19, 1909. The testimony of the physicians substantiated the statements made to me by Marrin that there were two lists. To the physicians who were not on what the district attorney designated as the black-list, no mention of appendicitis, no symptoms of same, and no history of repeated attacks were given. It is unnecessary to say that the defense did not call Dr. Ochsner.

Dr. Lowell of Rogers Park, who also examined Marrin, was subpenaed by the defense, but on hearing the testimony in the court-room for a few minutes made the attorney understand that he would not make a good witness for the defense and was excused.

Clarke Helme Loomis on the stand said, the purpose of the investigation stated to him (Marrin) by the Kradwell Drug Company was to bring to light certain alleged practices by certain physicians and certain druggists in Racine contrary to public policy and to the detriment of the Kradwell Drug Company.

G. V. Kradwell testified that he named the doctors he wanted investigated—i. e., Drs. Bjorkman, S. C. Buchan, Fazen, Pope, Collins—and there might have been others.

In face of all this, G. V. Kradwell, in a communication to the three newspapers of this city, states that Marrin was never employed by the Kradwell Drug Company nor was he ever paid money by them, nor did he admit having employed Mr. Marrin. Mr. Kradwell further states that he is more than satisfied with the evidence he has, which was collected solely as a protection to his firm and to the people of Racine. It is unnecessary to comment on this statement.

The defendant was found guilty and sentenced to two years at Fort Leavenworth and fined $750. Judge Landis, in sentencing the prisoner said that Mr. Kradwell was in bad company. You have heard the old saying, that birds of a feather, etc.

In justice to the other druggists of this city, I will say that a number of them were approached and some even offered inducements to go into the so-called investigation, but would have nothing to do with it.

G. V. Kradwell is a member of the State Board of Pharmacy, but was not the choice of the state society.

The contemptible feature of this transaction is the procuring of a private detective without character to deceive certain reputable physicians and attempting to secure opposing opinions from others, not going to all under the same conditions, but endeavoring by this means to bring into disrepute those who had fallen under the ban of the Kradwell Drug Company.

E. A. TAYLOR, M.D., Racine, Wis.

Omit Whisky and Brandy from the Pharmacopeia

To the Professors of Materia Medica and Therapeutics in the Medical Colleges, and to the Medical Delegates to the Pharmacopeial Convention:

The Department of Medical Temperance of the National Woman's Christian Temperance Union respectfully requests that you consider carefully the following arguments for the omission of whisky and brandy from the next revision of the Pharmacopeia, and requests that you use your influence to secure this:

1. The Pharmacopeia is claimed to reflect the best medical practice of the time. This department has collected statistics from hospitals all over the world, and the opinions of many of the leading physicians of this and other countries. These statistics show conclusively that the use of alcoholic liquors as medicinal agents has diminished in all hospitals and in the practice of most physicians; in fact many physicians state that they never have occasion to prescribe alcohol in any form. It seems to us that in view of these facts the retention of whisky and brandy in the U. S. P. places the medical profession in a false light. In this connection it may be noted that only two pharmacopeias recognize whisky, that of Greece and our own. If a substance which has been known so well, and for so long a time, possessed valuable medicinal properties, is it conceivable that other nations would not have included it in their pharmacopeias? The therapeutic committee of the British Medical Association has recommended the omission of brandy (the only distilled liquor in the British Pharmacopeia) from the British Pharmacopeia.

2. The retention of whisky and brandy in the Pharmacopeia deceives the public in regard to the medicinal value of these substances. One of the strongest arguments advanced by the liquor dealers and the manufacturers of "patent medicines" is that whisky and brandy, or the ingredients of the "patent medicines," are contained in the Pharmacopeia, and thus receive the sanction of the medical profession. It is difficult for the individual physician, who is advising his patient against the use of whisky and "patent medicines," to counteract the false impression thus conveyed. W. C. T. U. workers find the same difficulty in trying to teach women to avoid the self-prescription of alcoholic liquors and "patent medicines," a work which has the endorsement of all good physicians.

3. As is well-known, the whisky interests are thoroughly organized, and are using every means possible to secure the endorsement of the medical profession for the use of alcohol. There is nothing else in the Pharmacopeia which has such

vast commercial interests as whisky; it is probably more important commercially than all of the drugs in the Pharmacopeia combined, and it is certain that those interested in it will use every effort to get it endorsed by the convention. Is it not unfair, both to the medical profession and to the public, which looks to the medical profession for guidance in such matters, for a substance of such extremely limited value, if it has any, medicinally, to occupy such a conspicuous position? It seems to us unfortunate for the Pharmacopeia to be exploited commercially. The chairman of the present Committee of Revision has frequently spoken of the bribes (in one case amounting to $5,500) offered him if he would change certain words in the Pharmacopeia. It would be most unfortunate for the influence of physicians for any suspicion to be cast on the motives governing the attitude of the Pharmacopeia, and we believe that there is no subject in which this attitude could be more easily misunderstood and misrepresented than in the case of whisky.

There are other preparations in the U. S. P. to which we should like to direct your attention. The International Conference for the Unification of Formulas for Potent Medicaments urged that no such medicaments be made in the form of wines; this action was taken entirely for scientific reasons. Nearly all of the pharmacopeias have discontinued the use of wine as a pharmaceutical agent. The U. S. P., however, contains at least eight such wines, one of which, wine of coca, has the reputation of being used as a beverage rather than as a legitimate drug. Others of these wines are, no doubt, used for beverage purposes also. May we not urge you to use your influence in securing the omission of these preparations which are admitted to be unscientific, and which we know are a foe to temperance, and which place the medical profession in a false light, that of being on the side of the liquor-seller in the present struggle against intemperance?

MARTHA M. ALLEN, Superintendent of Medical Temperance for the World's and National W. C. T. U., Marcellus, N. Y.

Wanted: Relief or Cure for Progressive Muscular Atrophy

To the Editor:—A man of means has a member of his family afflicted with progressive muscular atrophy, the diagnosis having been established with certainty after consultation with some of the highest neurologic authorities of New York City and various cities of Europe. These physicians are unanimously of the opinion that the case is incurable, inasmuch as, up to the present, there has been published no form of treatment or medication which is positively known to have cured or arrested the inroads of this malady.

This man wishes to spare no effort to bring relief. He believes that perhaps, somewhere, some physician may have successfully hit on some method of curing a patient with progressive muscular atrophy, but through his inability to corroborate his results, owing to rarity of cases or through modesty, or for fear of being discredited, has failed to publish a report of his case. This man's idea is to try to bring this record to the surface by making an appeal to the profession through THE JOURNAL.

The case itself presents the characteristic picture and is typical of progressive muscular atrophy in every particular. The patient is fifty years old, married, and in excellent general health. About one and one-half years ago, the disease made its appearance in the left hand, progressed, and within a few months involved the right hand. Its progress since has been very slow. The family of this patient wish to announce that any physician who supplies a complete history and detailed description of the method of treatment he may have successfully used in any case of progressive muscular atrophy, the trial of which method leads to the cure or arrest of the disease in their relative, will be rewarded by a liberal cash prize.

Requests for further particulars and replies should be addressed to ENQUIRER,

Care of THE JOURNAL A. M. A.

[COMMENT: The above letter is from a New York physician, acting for a wealthy New York merchant, who has a sister suffering from the disease mentioned. Last December this merchant, through his physician, sent us an advertisement for insertion in THE JOURNAL. This advertisement offered a considerable reward for a cure for the disease. The advertisement was refused and reasons given. Three or four weeks afterward the merchant wrote:

"My sister is now being treated by a very reputable doctor, who has succeeded not alone in stopping the development of a similar trouble, but has placed his patients on the road to recovery. With two of these patients we had a personal interview, and therefore, we hope that the same favorable results will be accomplished with my sister."

Thus the matter ended until the receipt of the letter which we have quoted above. Whatever replies are received will go through the hands of the family physician.—ED.]

The von Recklinghausen Testimonial

To the Editor:—National committees have been formed to receive contributions from the friends and former students of Prof. F. von Recklinghausen, who three years ago retired from the professorship of pathologic anatomy which he had held with distinguished success for thirty-five years in Strassburg, where he is still working with undiminished energy and industry in completing investigations begun over ten years ago.

In conformity with his known preference, the funds contributed are to be used for a "von Recklinghausen Foundation" for educational and scientific purposes, but the determination of the precise terms and uses of the foundation is to be left to Prof. von Recklinghausen.

The opportunity is given to his American friends, admirers and students, who desire thus to honor this great teacher and master of pathologic anatomy, to send their names and contributions either to one of the undersigned members of the American committee or to the "*Aktiengesellschaft für Boden- und Kommunalkredit*" *in Strassburg i. Els.*, Germany. The receipt of contributions, which will close on May 1, will be duly acknowledged.

J. GEORGE ADAMI, Montreal; WILLARD BARTLETT, St. Louis; F. FORCHHEIMER, Cincinnati; G. FÜTTERER, Chicago; A. JACOBI, New York; W. OPHÜLS, San Francisco; B. SACHS, New York; JAMES TYSON, Philadelphia; W. H. WELCH, Baltimore; FRANCIS H. WILLIAMS, Boston.

The Public Service

Medical Department of the Army

Changes for the week ended March 5, 1910:

Snyder, Craig R., capt., granted leave of absence for 2 months.

Oliver, Robert T. E., and S. D. S., February 24, par. 1, S. O. 288, Dec. 11, 1909, War Dept. is so amended as to assign him to duty and station at Fort Hamilton, N. Y., instead of Fort Hancock, N. J.

Pillsbury, Henry C., lieut., leave of absence extended 1 month.

Truax, Jesse P., 1st lieut., M. R. C., relieved from further duty at Fort Ward, Wash., and will proceed to his home. He is relieved from active duty in the Medical Reserve Corps, to take effect April 5, 1910. Leave of absence extended to include April 5.

Laflamme, F. L. K., dental surgeon, left Fort Sheridan, Ills., en route to Philippine Islands for duty.

Jones, Percy L., capt., granted 4 months leave of absence, to take effect on his arrival in the United States.

Huggins, John B., capt., granted 20 days' leave of absence about April 1, 1910.

Stallman, George E., dental surgeon, left Fort Logan H. Roots, Ark., en route to station at Fort Sam Houston, Tex.

Graham, George D., dental surgeon, reports for temporary duty at Fort Crook, Neb.

Maddux, Henry C., 1st lieut., M. R. C., ordered to Fort Monroe, Va., for duty.

Marietta, Shelley H., 1st lieut. M. R. C., ordered to Fort Des Moines, Iowa, for duty.

McLaughlin, William F., 1st lieut., M. R. C., ordered to Fort Hancock, N. J., for duty.

Pulver, Arthur L., 1st lieut., M. R. C., ordered to Fort Porter, N. Y., for duty.

Register, Edward C., 1st lieut., M. R. C., ordered to Fort Du Pont, Del., for duty.

Whitham, Jay D., 1st lieut., M. R. C., ordered to Plattsburg Barracks, N. Y., for duty.

Medical Corps of the Navy

Changes for the week ended March 5, 1910:

Furlong, F. M., surgeon, orders of February 14, modified, unexpired leave revoked, ordered to duty at Naval Hospital, Boston.

Leys, J. F., surgeon, detached from duty with department of sanitation, Canal Zone.

Bell, W. H., surgeon, ordered to duty with department of sanitation, Canal Zone.

Garrison, P. E., asst.-surgeon, detached from duty under instruction at Naval Medical School, Washington, D. C., and ordered to duty at the Naval Hospital at that school.

Brown, E. M., P. A. surgeon, detached from Naval Recruiting Station, Los Angeles, Cal., and ordered to the Naval Station, Guam, M. I., via *New Orleans*.

Straeton, R. J., asst.-surgeon, detached from duty at Naval Station, Guam, M. I., and from duty on board the *Supply*, and ordered to Washington, D. C., for examination for promotion.

Munger, C. B., P. A. surgeon, detached from the Naval Station, San Francisco, and ordered to the Naval Recruiting Station, Los Angeles, Cal.

Hermesch, H. R., asst.-surgeon, detached from the *California*, and ordered to the Naval Training Station, San Francisco.

Public Health and Marine-Hospital Service

Changes for the week ended March 2, 1910:

Wasdin, Eugene, surgeon, granted 1 month's leave of absence from Feb. 22, 1910, on account of sickness.

Magruder, George M., surgeon, reassigned to duty at Portland, Ore., effective Feb. 23, 1910.

Cumming, Hugh S., P. A. surgeon, directed to proceed to Cape Charles Quarantine Station, Va., and assume command. Granted 7 days' leave en route to station.

Lumsden, L. L., P. A. surgeon, directed to proceed to Berkeley Springs, W. Va., on special temporary duty.

Billings, W. C., P. A. surgeon, on being relieved by Assistant Surgeon H. J. Warner, directed to proceed to Fort Stanton, N. Mex., and report to the medical officer in command for duty and assignment to quarters.

Roberts, Norman, P. A. surgeon, granted 1 day's leave of absence, Feb. 26, 1910, under Paragraph 191, Service Regulations.

Warner, H. J., asst.-surgeon, on being relieved by Passed Assistant Surgeon Hugh S. Cumming, directed to proceed to Arundel Cove, Md., and report to the Superintendent, Revenue-Cutter School of Instruction, for duty.

Kolb, Lawrence, asst.-surgeon, granted 2 days' leave in February, 1910, under Paragraph 191, Service Regulations.

Burland, B. W., acting asst.-surgeon, granted 7 days' leave of absence from March 1, 1910.

Robertson, Herman, acting asst.-surgeon, granted 6 months' leave of absence, without pay, from March 1, 1910.

Stewart, W. J. S., acting asst.-surgeon, granted 30 days' leave of absence, without pay, from Feb. 23, 1910.

Townsend, F., acting asst.-surgeon, granted 12 days' leave of absence from Feb. 23, 1910.

Association News

NEW MEMBERS

List of new members of the American Medical Association for the month of February, 1910:

ALABAMA

Burns, W. A., Birmingham.
Farill, J. P., Farill.
Gaines, Toulmin, Mobile.
Holliday, W. H., Birmingham.
McCall, D. T., Mobile.
McClendon, H. L., Waverly.
Newburn, G. W., Pritchard.
Stallings, H. S., Troy.
Tisdale, M. L., Mt. Vernon.
Ward, H. S., Birmingham.

ARKANSAS

Causey, G. A., Swifton.
Chaffin, C. W., Moro.
Hathcock, A. M., Harrison.
Johnston, Wm., Hardy.
McGraw, S. J., Wesson.
Nisbett, Frank, Brookland.
Osborne, J. M., Howell.
Stinson, H. C., Little Rock.
Wadley, B. I., Little Rock.

CALIFORNIA

Berg, Adolph, San Francisco.
Lissner, H. H., Los Angeles.
Molony, M., San Francisco.
Nelson, J. E., Lodi.
Sanderson, H. E., Stockton.
Sawyer, W. A., Berkeley.
Sinclair, O. W., Eureka.

COLORADO

Bancroft, F. W., Denver.
Denison, H. S., Denver.
Hoel, G. L., Fort Collins.
Ingraham, C. B., Denver.
Needham, C. N., Grand Junction.
O'Brien, R. L., Akron.
Pankhurst, C. T., Brush.
Van Der Schow, G. E., Fowler.
Singer, W. F., Pueblo.
Winslow, W. H., Fort Collins.

CONNECTICUT

Beach, C. T., Hartford.
Biggs, T. J., Stamford.
Furney, John, New Britain.

DISTRICT OF COLUMBIA

Reeves, W. P., Washington.

FLORIDA

Douglas, J. H., Jacksonville.
Howard, N. deN., Sanford.
Julian, A. J. P., Lake City.
Renshaw, F. G., Pensacola.
Terry, C. E., Jacksonville.
Webb, DeWitt, St. Augustine.

GEORGIA

White, A. D., Gainesville.

IDAHO

Barrows, F. L., Moscow.
Cline, C. M., Idaho Falls.
Wiik, J. C., Moscow.

ILLINOIS

Adams, J. F., Hazel Dell.
Allen, A. W., Robinson.
Ayling, C. H., Gridley.
Baker, R. W., Peoria.
Bath, T. W., Bloomington.
Baldwin, H. H., Joliet.
Beeson, H. R., Benld.
Bell, C. R., Peoria.
Bemisderfer, J. R., Monee.
Best, E. H., Freeport.
Blakely, J. T., Mt. Erie.
Boles, D. S., Herrin.
Boughton, T. H., Chicago.
Bourland, I. N., Equality.
Britton, J. A., Chicago.
Bundy, J. A., Iroquois.
Buxton, T. C., Decatur.
Chittum, J. D., Sorento.
Clayton, J. W., Johnston City.
Coss, W. A., Danvers.
Cromwell, J. H., Altona.
Crow, O. L., Assumption.
Davis, E. L., Peoria.
Dew, W. A., Belleville.
Dixon, W. A., Decatur.
Dudley, F. J., Decatur.
Duey, D. R., Belleville.
Floyd, T. W., Peoria.
Fuller, Erlan, Gardner.
Gailey, W. W., Jr., Bloomington.
Gale, F. C., Pekin.
Gardner, W. H., Bloomington.
Garrison, F. F., Havana.
Gavin, E. F., Waukegan.
Glasford, S. T., Danvers.
Goodwin, P. B., Summum.
Gott, W. A., Washington.
Graham, S. A., Clinton.
Hasson, Edward, Peoria.
Heffernan, M. T., Decatur.
Henderson, H. C., Milford.
Hogan, J. H., Chicago.
Houston, W. W., Good Hope.
Hummeland, K., Orland.
Kelso, C. E., Champaign.
Larson, J. M., Sycamore.
Maienthal, B. L., Decatur.
Mayes, J. W. D., Illiopolis.
McClelland, C. E., Decatur.
McMahon, M., Palmyra.
Morris, R. L., Decatur.
Morrow, G. W., Anna.
Moter, R. L., Browns.
Muehlmann, C. G., Pekin.
Orner, C. T., Bloomington.
Perkins, J. B., Franklin.
Pollock, J. R., Nebo.
Reinhardt, O. F., Aviston.
Ricker, S. J., Aurora.
Roberts, J. C., Peoria.
Russell, Ben, Armington.
Sanders, J. W., Decatur.
Scippel, Clara P., Chicago.
Sloan, E. P., Bloomington.
Spannagel, W. C., E. St. Louis.
Staib, O. W., Bartlett.
Stokes, C. A., Edinburg.
Taxis, H. J., Plano.
Thomas C. R., Roodhouse.
Trewyn, W. T., Peoria.
Tweedy, W. R., Mulkeytown.
Watts, G. W., Chicago.
Wilcox, C. H., Princeville.
Yarnell, Oscar, Decatur.
Yarnell, O. B., Wenona.
Yoder, H. L., Morton.

INDIANA

James, N. A., St. Meinrad.
Muncie, H. L., Brazil.
Myers, A. W., Monroe City.
Tubbs, G. R., West Point.
Waters, S. C., Middletown.

IOWA

Bradley, H. M., Manchester.
Clark, H. F., Stuart.
Free, S. P., Perry.
Hoenes, A. J., Denison.
Huner, S. A., Mineola.
Husted, H. L., Muscatine.
Luehrsman, B. N., Dyersville.
Moore, E. A., Harlan.
Niblock, G. F., Derby.
Peck, J. H., Iowa City.
Potter, W. W., Kinross.
Ruth, O. J., Earlham.
Talley, L. F., Diagonal.
Williams, J. A., Belle Plaine.
Williams, J. C., What Cheer.

KANSAS

Appleby, Clyde, Lenora.
Beckner, E. J., Selden.
Blake, C. D., Ellis.
Brown, G. H., Chanute.
Collins, D. W., Arrington.
Eagan, R. E., Springhill.
Grubbs, L. Y., Topeka.
Little, G. R., Wichita.
Moses, H. N., Salina.
O'Neil, F. E., Prescott.
Pearson, W. H., Kensington.
Stewart, R. B., Topeka.
TenBrook, A., Parsons.
Vannoy, H. E., Linwood.
Vaughn, C. K., Leavenworth.
Zane, T. M., Emporia.

KENTUCKY

Bone, R. L., Madisonville.
Charlton, C. C., Wingo.
Fallis, W. E., Louisville.
Johnson, W. G., Murray.
Lewis, J. C., Lexington.
McCord, H. E., Ludlow.
McRee, A. V., Murray.
Rice, D. B., Denver.

LOUISIANA

d'Aquin, J. J., New Orleans.
Elliot, J. M., New Orleans.
Tudury, R. A. New Orleans.

MARYLAND

Conrad, T. K., Chevy Chase.
Geatty, J. S., New Windsor.
Hurdon, Elizabeth, Baltimore.
Lumpkin, R. G. L., Baltimore.
McCormick, G. C., Sparrow Point.
White, J. M., Crapo.

MASSACHUSETTS

Ameno, J. L., Quincy.
Blanchard, W. S., Boston.
Brady, J. E., Brockton.
Call, Emma L., Boston.
Devenny, J. H., Dorchester.
Drake, R. A., New Medford.
Fenwick, G. B., Chelsea.
Morse, Irene May, Clinton.
Schmidt, F. S., Roxbury.
Stewart, R. C., Lowell.

MICHIGAN

Aurin, E. C., Cedar Springs.
Barnes, J. W., Prattville.
Campbell, J. D., Grand Rapids.
Gibson, F. J., Jackson.
Winslow, R. C., Sault Ste. Marie.
Karraker, C. W., Detroit.

MINNESOTA

McBroom, D. E., Elysian.
Murray, D. D., Duluth.
Thimsen, N. C., Hayfield.
Tyrrell, C. C., Minneapolis.

MISSOURI

Belden, W. E., Columbia.
Benson, B. G., St. Louis.
Brown, J. E., Florida.
Bruton, T. S., Seymour.
Chilton, J. A., Van Buren.
DeVilbiss, Frank, Eugene.
Dixon, J. C. B., West Plains.
Downing, B. R., Farmington.
Drew, F. W., Ethel.
Einbeck, W. F., New Haven.
Hochdoerfer, D. F., St. Louis.
Huggins, C. L., Frisco.
Kelley, I. D., Jr., St. Louis.
Maisch, A. F., Manchester.
Mardorf, W. C., St. Louis.
McGann, P. J., St. Louis.
Michle, T. A., Cooter.
Mitchell, G. B., Forsyth.
Nunn, J. C., Novinger.
Owens, I. M., Beaufort.
Owens, J. H., Sweet Springs.
Pollman, W. H., St. Louis.
Rabenau, W. J., Fordland.
Rodman, W. W., Pierce City.
Ross, Mary S., Hannibal.
Schisler, Edwin, St. Louis.
Shafer, F. M., Edgerton.
Steele, A. J., St. Louis.
Stevenson, F. S., Aurora.
Taulbee, J. B., Joplin.
Thierry, C. W., St. Louis.
Welch, J. C., Salem.
Westbrook, G. W., St. Louis.

MISSISSIPPI

Adkins, G. E., Louise.
Duke, B. F., Scranton.
Turner, T. F., Sallos.

NEBRASKA

Brenn, C. P., Western.
Byrnes, M. R., Crete.
Douglas, W. J., Atkinson.
Gorder, J. W., Weston.
Penner, H. G., Plymouth.
Sturdevant, C. L., Atkinson.

NEW JERSEY

Fyfe, G. D., Jersey City.
Gruessner, Anthony, New Brunswick.
Hart, E. P., Jersey City.
Keller, S. C., Newark.
Spence, Henry, Jersey City.

NEW MEXICO

Garmany, J. F., Portales.

NEW YORK

Andrews, C. H., Buffalo.
Bookman, M. R., New York City.
Chapman, S. U., New York City.
Cherry, T. H., New York City.
Dean, W. L., Lyons.
Finley, H. L., Brooklyn.
Jankovski, A. S., Brooklyn.
Mason, F. S., New York City.
Riesenfeld, E. A., New York City.
Schapiro, Jos., New York City.
Weingarten, F. S., New York City.
Wilson, H. H., Stockbridge.

NORTH CAROLINA

Bolton, Mahlon, Rich Square.

NORTH DAKOTA

Aaker, A. O., Velva.
Blanchard, H. B., Columbus.
Blatherwick, W. E., Drake.
Cain, W. T., Underwood.
Strong, T. J., Enderlin.

OHIO

Rind, R. C., Springfield.

OKLAHOMA

Beasley, A., Hobart.
Buchanan, M. W., Watonga.
Colley, K. L., Bigheart.
Edwards, F. M., Fairland.
Fowler, Wm., Alderson.
Haynie, W. D., Powell.
Ibs, H. C., Prague.
Lewis, E. F., Kingston.
Lowery, Allen, Blackwell.
McDonald, J. G., Okfuskee.
Rentfro, J. F., Sapulpa.
Stone, S. M., Edmond.
White, L. C., Adair.

PENNSYLVANIA

Blough, H. K., Elizabethtown.
Griscom, J. M., Philadelphia.
Kemper, C. A. S., Bethlehem.
Pollock, G. W., Wilkinsburg.
Potteiger, G. F., Hamburg.

SOUTH DAKOTA

Abbott, G. A., Watertown.
Hart, R. S., Hazel.

TENNESSEE

Brock, R. A., Sweetwater.
Linn, H. P., Palmyra.
Miller, R. C., Evansville.
Padgett, Hazie, Nashville.
Stephenson, C. V., Centreville.

TEXAS

Von Brunow, V. E., Pampa.
Dawson, I. J., Marble Falls.
Edgar, T. O., Gainesville.
Evans, Rebecca M., Denton.
Grant, S. H., Deport.
Long, R. L., Atlanta.
Mayo, S. L., Belton.
Smith, C. Z., Anna.

UTAH

Nielson, A. J., Ephraim.

VIRGINIA

Miller, E. R., Harrisonburg.

WASHINGTON

Ghiglione, Aug., Seattle.
Monzingo, A. S., So. Tacoma.

WEST VIRGINIA

Glass, E. F., Wheeling.
Waldron, T. C., Coalwood.

WISCONSIN

Berger, A. J., Johnson Creek.
Cooke, J. M., Darlington.
Donnell, J. E., Cuba City.
Elliott, E. S., Fox Lake.
Fiedler, Otho, Athens.
Hamlin, F. J., Beloit.
Hayward, J. C., Marshfield.
Hoffmann, M. A. T., Campbellsport.
Kleinschmidt, George, Milwaukee.
Morrison, Morris, Cashton.
Rodermund, A. M., Athens.
Sperry, S. B., Milwaukee.
Vorpahl, R. A., Elkhorn.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of State of, Mobile, April 19-22.
Am. Laryn., Rhin. and Otol. Society, Washington, D. C., April 28-30.
Arizona, Medical Association of, Phoenix, April 20-21.
California, Medical Society of State of, Sacramento, April 19-21.
Conf. State and Prov. Bds. of Health, Washington, April 28-29.
District of Columbia, Medical Association of, Washington, April 26.
Florida, Medical Association of, Jacksonville, April 6-8.
Georgia, Medical Association of, Athens, April 20-23.
Maryland, Med. and Chirurgical Faculty of, Baltimore, April 26-28.
Missouri Valley, Medical Society of, Omaha, March 17-18.
Mississippi State Medical Association, Oxford, April 12.
South Carolina Medical Association, Laurens, April 19-21.
Tennessee State Medical Association, Memphis, April 12-14.

CONFERENCE OF THE COUNCIL ON MEDICAL EDUCATION AND OF THE COMMITTEE ON MEDICAL LEGISLATION OF THE AMERICAN MEDICAL ASSOCIATION

Held in Chicago, Feb. 28—March 2, 1910

(Monday Morning Session, Continued from page 814)

Report of the Special Committee on Practical Tests at State License Examinations

DR. W. S. FULLERTON, St. Paul: The members of your Committee on Practical Examinations begs to report: After about a year's trial in their respective states they find the practical examination on certain subjects in the curriculum for state licensure eminently satisfactory. The state boards which have adopted it began in a tentative way, but experience leads the committee to believe that it is capable of considerable extension and development and worthy of universal adoption by state examining boards. The committee believes that the practical examination, more than any one thing, compels the candidate for license to come before the board with real knowledge in the subjects to which it is applied, obtained by well-directed work, and that it effectually does away with the "quiz-compend applicant" superficially and specially crammed to meet the ordinary written examination.

Your committee recommends that state examining boards shall require practical examination in the following subjects: diagnosis, pathology, histology, bacteriology, urinalysis, obstetrics and anatomy. While this may sound formidable the committee is convinced that it is feasible. For example, on the basis of 100 applicants a physical diagnosis examination can be completed in 5 hours by providing 10 subjects, taking the class in relays of 10, each to examine one case and to be allowed half an hour for such examination. The practical in anatomy can be carried on concomitantly, each relay passing from one to the other. The committee recommends that the present written examination in anatomy (which is necessarily book anatomy) be dispensed with, and a practical examination consisting of a description of prepared specimens be substituted, believing that one such specimen correctly described is of more value as a test of anatomic knowledge than ten answers which may involve only the question of memorizing from a quiz compend. The committee also recommends that the practical examination in histology, pathology and bacteriology shall consist in the identification of a sufficient number of microscopic slides and gross specimens. The committee further recommends that there shall be a practical chemical and microscopic examination of one or more specimens of urine.

Practical Examinations in Ohio

DR. GEORGE H. MATSON, Columbus, Ohio: In a supplementary statement Dr. Matson, a member of the committee, called attention to the results of practical examinations which were inaugurated by the Ohio board in June, 1908. Since that time applicants' grades in the laboratory branches show a marked improvement over the grades given before such tests were adopted. There is reason to believe that the improvement was due directly to the added requirement and that in future examinations this improvement will be more pronounced.

What has been accomplished by the laboratory tests can be duplicated by practical examinations in other branches. The examination, in addition, of blood, sputum, feces and stomach contents is also suggested. Examination in clinical medicine may be inaugurated by presenting cases of readily recognized heart and lung lesions, enlarged liver and spleen in satisfactory subjects, syphiloderms and easily recognized skin diseases. In anatomy, the applicant may be asked to indicate and name points of interest on a given bone, to outline the various organs in the living subjects, and to locate points of interest that may be required of him. As these examinations progress, the cadaver may be used and minor surgery added to the list of practical subjects.

In obstetrics, the manikin may be used and it is suggested that the applicant be required to demonstrate and diagnose positions and to demonstrate the treatment of abnormal position. He should also be required to demonstrate the use of the pelvimeter. If the time permits, practical work in refraction may also be added. Omitting refraction, the entire examination here suggested need not extend longer than one and a half hours. Six examiners could examine seventy-two applicants in six hours. Proctors rather than examiners are needed to conduct the written work. The details of such an examination could easily be arranged.

There is a spirit of unrest among the laboratory members of the various faculties that will not be satisfied until practical tests have been given a fair and impartial trial at the hands of examining boards. Students who contemplate such examinations will govern themselves accordingly, and medical colleges doubtless will improve the character of their work to meet the demands for it. A sentiment in favor of practical tests prevails and the efforts in this direction deserve further recognition. It is also my opinion that position on medical boards will be more dignified and the influence of the board greatly increased by the addition of these practical tests.

Discussion on Practical Examinations

DR. S. D. VAN METER, Denver, Colo., a member of the committee, opened the discussion as follows:

I heartily agree with the results of practical examinations as given by Dr. Matson. There is no state examining board

in the country that cannot conduct a practical examination in urinalysis, pathology, anatomy and diagnosis. In conducting practical examinations in these branches, however, I can see how many boards will have difficulty in carrying them out along the lines indicated by Dr. Matson. It does not take long for the experienced examiner to tell whether an applicant for licensure can tell the difference between the abnormal and the normal. For these practical examinations the Colorado board has used a well-developed man and the applicant is expected to point out the anatomic landmarks on him. In anatomy we have used the stereopticon after the manner of Cunningham and have found it very useful. I think the time is coming when surgery and all other specialties will require a supplementary license in this country.

DR. W. J. MEANS, Columbus, Ohio: Practical examinations have been a hobby of mine for many years. A written examination simply requires a censor who sees that each applicant is doing the fair thing. This does not require of the applicant any particular skill but a practical examination brings out his ability.

DR. JAMES R. GUTHRIE, Dubuque, Iowa: These reports indicate gradual evolution and development of proper scientific examinations of our students, and no fact is more potent in the increase and development of that system than the requirement of special examinations for licensure for the practice of specialties, and if the Council on Medical Education voices to the profession of this country its decision or conclusion based on this principle it will have done the cause of general medical education and the people at large a service which will be lasting and will benefit the whole domain of education.

DR. EDWIN J. BARTLETT, Hanover, N. H.: I do not know what the teacher of anatomy is to do during the mixed periods when some examining boards are insisting on a verbal examination while the more enlightened boards are insisting on practical examinations, because we cannot prepare men for both examinations at the same time.

DR. E. J. WILSON, Columbus, Ohio: I feel that the field of practical examinations ought to be enlarged, and there is no reason why it should not cover the field of diagnosis because the criticism that has been made of our state examinations all over the country is that they have been too academic, or mere tests of memory. These examinations should be as practical as possible.

DR. C. P. FALL, Nebraska: We have adopted the practical method of examination for licensure in Nebraska, and this examination includes urinalysis, pathology, physical diagnosis and bacteriology. We have also adopted a practical test in refraction.

DR. B. D. HARISON, Detroit, Mich.: If the system of having practical examinations could be carried out it would overcome many objections now raised to the state license examination.

DR. F. C. TODD, Minnesota, a member of the Council on Medical Education's subcommittee of ten appointed a year ago on diseases of the eye, ear, nose and throat, said that in considering subjects which should be taught in ophthalmology the committee decided unanimously that refraction work should not be taught, because they were educating men to become general practitioners.

DR. GEORGE W. WEBSTER, Chicago: While I would welcome as heartily as any one anything that would enable us to make an adequate, fair and reasonable test of an applicant's fitness to practice medicine, still I think we have not arrived at the entire solution of that by adding the so-called practical test to the examinations.

DR. EDWARD T. ABRAM, Dollar Bay, Mich.: I believe that there are some examinations which can be conducted in a practical way, but this cannot be done by four or five men. Practical examinations should be conducted by examiners who are well versed in the particular branches or studies on which applicants are to be examined.

DR. H. D. ARNOLD, Boston: The Massachusetts Medical Society has decided that an applicant should pass a written examination first before being eligible for a practical examination.

MONDAY AFTERNOON SESSION

Discussion on the Addresses of Mr. Brown, President Pritchett, President Schurman and Dr. Vaughan

[As stated in THE JOURNAL, March 5, page 814, these addresses will be published in the Original Articles Department of THE JOURNAL later.]

MR. GEORGE E. MACLEAN, President of the University of Iowa: Education has come to be recognized by the professions as one of the great social movements of the age; education has made as much progress in its ideals, in its methods, and in its accomplishments as has been made by inventions in the industrial and commercial worlds, and to-day is the day of the coordination of these great movements. That the medical profession, so ancient, so honorable and so sacred, should recognize the educator, the despised and underpaid teacher, is one of the most significant features of promise for the future of medicine and of medical education. No longer can we hope for anything that is segregated, that is, without thorough cooperation, to give results in education or in medicine. The central thought of a university is research or investigation. Universities are experiment stations for truth, for the discovery of new truths, and the new applications of principles, and medicine is the application of science. A college of medicine is as much a college of applied science as is a college of engineering; therefore, the medical college must be in a university. It cannot be affiliated at arm's length. It cannot be a bifurcated institution. It must be an integral part of the university.

DR. CYRUS NORTHROP, President of the University of Minnesota: Medical education is an exceedingly important subject. Nothing is more essential to the welfare of the human family in the way of education than is medical education. If a member of my family has typhoid fever I want a physician of clean character, a man of high principles and purpose, a man of knowledge and skill. Knowledge and skill are not the same thing. A boy may study in the laboratories of a university year in and year out; he may understand chemistry, and botany, and all the other ologies, and still lack a certain something that comes pretty near being classified under the head of common sense, and not be able to apply this to any particular case. He may understand chemistry and biology and everything else, and then designate a case of summer heat as measles or something of that kind. I do not want such a doctor as that and you do not. We want a physician who knows better than that. The first years of the medical course should be taught by men who are scientific men, devoting their whole time to the work, whether it be bacteriology, embryology, histology or anatomy. They ought to be men who are teachers of these sciences. When it comes to the clinical side, what objection is there to a man teaching who is engaged in the practice of medicine? I see no objection to it. The practicing surgeon can more successfully teach surgery than one who has only a theoretical knowledge of the subject. The same holds true with regard to the teaching of other branches.

DR. B. F. TURNER, Memphis, Tenn.: Inspired by the remarks in each of the addresses we have listened to, the inference has been drawn that the majority of the existing medical colleges should die. I ask: Which ones shall die? The answer to that question is involved in the evolution of the colleges that exist. If we go back forty years in the history of America we find a great country without regulation concerning the practice of medicine and we find on the part of a devoted few an honest effort to elevate professional standards by the process of education and organization; and, therefore, I take it, the cause for the existence of more than one institution is not that it was organized as a money-making institution, but by an effort on the part of some one to develop a higher ideal and to elevate a noble profession. Certainly that is true in certain sections of our country where educational advantages have been notably deficient. These institutions are asked to-day to get out of the way, and told that there is no need for them. Who will determine which shall cease to exist? The answer is, those shall become extinct who do not conform to standards of a certain altitude. Some medical

schools have expended hundreds of thousands of dollars for equipment and for teaching purposes, and some of these could only reach high ideals by degrees.

DR. A. D. BEVAN, Chicago: There is no section of the country in which to-day the educational problem is being so thoroughly thought out as it is in the South, and it is not going to be many years before the South will have first-class four-year medical schools which will come to the front. We know what splendid work Southern medical men have done and are doing and we are proud of the South, and so far as the Council is concerned I am sure their ideas are helpful in every way and if any of the schools that have been criticized desire to have a detailed statement of the criticism, I am sure the members of the Council will furnish it to them. However, we want the Council to be helpful, and we shall attempt to make it of service in every way.

TUESDAY MORNING SESSION

Report of the Committee on Organization of a State Board of Medical Examination and License

DR. W. H. SAWYER, Michigan, chairman, read the report of this committee:

Should there be a separate board of medical examiners or should the state board of health also have examining and licensing powers? Without question, there should be a separate board of medical examiners. Several states have tried the combined board of health and medical examination, but have, after experience, separated them, and those states in which the two boards are already combined are endeavoring to have the division made.

Should the examining board be single or multiple? Single. Most of those states which have tried the multiple board have changed to the single board.

Should the examining board be sectarian or non-sectarian? A non-sectarian board by all means, if possible. However, under existing circumstances it does not seem practicable or possible of accomplishment. In 19 states the law provides for a mixed or sectarian board. Of 17 states in which the law is silent as to sect, 14 reported through the secretary of the board, 7 advocating a mixed board, 3 a non-sectarian board, and from 4 there was no expression.

Should the examining board be appointed by (a) the governor; (b) the governor on nomination of the state society, and (c) the state society? By the governor on nomination of the state society. Any other attempted method at this time would more than neutralize the good effect of the medical board on the profession and people at large.

Should the secretary be a member or an employee of the board? When possible he should be a member of the board, but not necessarily so.

Should the examining board be a part of the state university, or should it be entirely distinct from all educational institutions? It should be entirely distinct from all state educational institutions. This applies to every state in the union except New York, where the University of the State of New York is a corporate institution, executive in its character and non-teaching.

In connection with the report of Dr. Sawyer, Dr. W. Jarvis Barlow, California, presented some statistics from that state which gave a general idea of the fitness of such schools to educate students in medicine.

DISCUSSION

DR. EDWIN J. BARTLETT, Hanover, N. H.: How are competent examiners to be secured on the laboratory branches, such as chemistry, physiology, bacteriology, biology, which are advancing so rapidly, if examining boards are to be made up of men outside of colleges and universities? Practitioners of medicine are unfit to examine in these branches.

DR. W. H. SAWYER: The members of faculties of colleges or universities should not be members of examining boards, but provisions should be made whereby the laboratory work may be done by men outside of the board itself.

DR. E. J. WILSON, Columbus, O.: Is it not true that state boards have the authority to make such provisions?

DR. SAWYER replied to this in the affirmative.

DR. WILLIS G. MCDONALD, Albany, N. Y.: Formerly in the New York law there was a clause which prohibited the appointment of members of faculties of medical colleges on boards of examiners, but in the new law which was passed this clause was wisely left out. In the purely scientific division of medicine it is difficult to select a suitable examiner in pathology, bacteriology and bio-chemistry. For instance, an examiner in anatomy without a great deal of experience in teaching would find it extremely difficult to frame suitable questions.

DR. W. S. NAY, Vermont: The proper examiner should be the bedside practitioner. If he is not qualified to examine students who come before him I do not know who is.

DR. H. W. BRIGGS, Delaware: In 1907 an act was secured in Delaware regulating the practice of osteopathy, requiring osteopaths to come before one of the boards of the state or before the Medical Council with the selection of one osteopath, and since that time no osteopath has applied to the state for license to practice.

DR. L. B. MCBRAYER, Asheville, N. C.: I do not think that members of faculties of medical colleges should be on the board of examiners.

DR. E. J. WILSON, Columbus, Ohio: I believe that the members of examining boards should not be on the faculties of medical colleges.

DR. C. P. FALL, Nebraska: The consensus of opinion among the profession in Nebraska is that professors in medical colleges should not be members of the state board, although there is a professor on the state board at present.

DR. EDWIN F. BARTLETT, Hanover, N. H.: I have looked over the papers of many states and find that some examiners set questions that can be answered by yes or no. In my opinion, no competent examiner would do that.

The subject was further discussed by DR. GEORGE W. WEBSTER, Chicago, and the discussion closed by DRS. SAWYER and BARLOW.

Report of the Committee on Qualifications of Applicants

DR. S. D. VAN METER, Denver, chairman of the committee, presented this report:

It is unquestionably desirable that all applicants for license to practice medicine should be required to furnish proof of having received preliminary and collegiate education equal to that standard recommended by the Council on Medical Education. The members of the committee feel that all boards cannot afford to adopt these requirements for all applicants. Nothing can be said against its adoption for those making application for license on credentials, but to deny those wishing to make application by examination the right so to do raises a very serious question. The committee believes that only the fundamental branches should be included in the list of subjects for examination and that all questions on materia medica and therapeutics should be excluded. It is not advisable for the state to encourage sectarianism in medicine and it has no more right to recognize a school of medicine than one of theology. Examinations, in the opinion of the committee, should be oral, clinical and written. They should be practical and designed to furnish the examining board with adequate information on which to determine the educational and moral qualifications of those examined. The committee believes that examining boards should have the authority to determine the good standing of colleges. They should arrive at their conclusions by an unbiased review of all obtainable data, but owing to the cost and physical impossibility of making personal investigations of colleges at a distance, boards must of necessity at present reply chiefly on the reports of the Council on Medical Education and the Carnegie foundation for the Advancement of Teaching.

Vote on Examining Boards

The Conference took a vote on the following questions:

1. Should there be a separate examining board distinct from the board of health? A large majority voted in the affirmative.

2. Should there by only one examining board for all sects? Forty-three votes were cast in the affirmative, and four in the negative.

3. Should sectarianism be recognized on the board (osteopaths not included)? Thirty-nine votes were cast in the affirmative, and seventeen in the negative.

4. Should teachers in medical colleges be on the board? This question was answered by a very large negative vote.

5. Should graduation from a reputable medical college be a requirement for license? Affirmative vote, forty-nine; negative, three.

As to whether examinations should be oral or written, this matter was left to the various boards with the recommendation that examinations be made as practical as possible.

The question of whether or not state examining boards should determine the standing of colleges, as to whether they are reputable or not, was carried unanimously by an affirmative vote.

There were forty-two affirmative votes cast in favor of examinations in materia medica and therapeutics, with four opposed.

Report of the Committee on the Definition of the Practice of Medicine

DR. L. M. HALSEY, New Jersey, a member of this committee, stated that owing to the absence of the chairman, and failure to send his report, the committee was not able to present to the conference a very full report.

He presented the following:

1. Should a specific definition of the practice of medicine be included in the model act? Yes, in the judgment of the members of the committee present, a specific definition should be incorporated.

2. If so, what is the ideal form of such a definition? A person practices medicine and surgery within the meaning of this act, who holds himself or herself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity, physical or abnormal mental conditions, and who shall either offer or undertake by any means or methods to diagnose, treat, operate, or prescribe for any human disease, pain, injury, deformity, abnormal, mental or physical conditions.

3. Should limited practice, as midwifery, massage, optometry, osteopathy, mental healing, Christian science, mechanotherapy, neurotherapy, etc., be defined and provided for in the model practice act? No.

The committee suggested the elimination of midwifery, which should be under a special act requiring midwives to present a diploma from a reputable college of midwifery, and to pass a satisfactory examination before the board of medical examiners. The other practices should be regulated by a special act which shall specifically define their necessary qualifications and requiring applicants for license to pass a satisfactory examination before the state board of medical examiners.

Provision for Educational Standards in a Model Medical Practice Act

DR. N. P. COLWELL, secretary of the Council on Medical Education, Chicago: No practice act can be considered a model which does not provide for a single board of medical examiners, or a single authority for the enforcement of its requirements. Nor can it well be considered a model unless it provides that the members of this board are to be selected because of their special qualifications for the duties involved, rather than for political or other reasons. Unless these two points are safeguarded any provision for educational standards will be of limited value. With our form of government, a single board of capable medical examiners is the best and only legal barrier which can be placed between a suffering humanity and the hoards of would-be practitioners being turned out annually from the one hundred and sixty or more medical institutions in this country, many of which adhere to no definite standards, and have little or no facilities for the satisfactory training of medical practitioners. Taking it for granted that a single board of able medical examiners is provided for by the practice act, then the simplest wording of the clause, providing for educational standards is the best. A model practice act should not attempt to define educational standards nor what should constitute a medical college in good standing because standards are rapidly changing.

The requirements of graduation from a reputable medical college, as shall be determined by the board, affords a double assurance that all applicants granted licenses are well qualified to practice medicine. First, a medical college which the board knows is reputable has certified to the applicant's fitness to practice medicine by having granted him its diploma; and, second, the state board has subjected the applicant to its examination, which must have been satisfactorily passed before the license is granted. In the protection of a sick and suffering but credulous humanity from the crowds of ignorant and untrained would-be practitioners could a model practice act provide for less than this?

Report of the Committee on Reciprocity and Registration

DR. CHARLES H. COOK, Massachusetts, read the report of this committee:

1. What provision for reciprocity should be included in a model practice act? 2. Should reciprocity be based on mutual recognition or on a standard adopted by the board of the state from which the applicant comes?

The committee considered these two questions together. All medical legislation is embraced under what is called the police power and has to do with the protection and benefit of the public. Legislation relating to reciprocity should have for its object the public welfare, else such legislation cannot be justified. To justify a law establishing reciprocity between states it must be made clear that it would result in better protection to the inhabitants of the respective states.

For what purpose are the various state boards of registration established? To protect the inhabitants of the respective states from unqualified physicians.

Can the duty and the responsibility of thus protecting the inhabitants of any state be delegated to the examining boards of other states? There can be but one answer to this and that is that each state board is the only board to pass on the merits of applicants for registration in its state and such powers cannot constitutionally be delegated to anyone else.

The committee could not recommend any law providing for general reciprocity. The suggestion was made instead that each state board be given authority to pass on the merits of each physician applying from another state, and whenever his credentials, affidavits and general qualifications would warrant such action that he be registered without full examination.

What provisions for the registration of licentiates should a model law contain, and should any provision be made for county registration? If so, before what officers? As the purpose of registration is the establishment of a legal record accessible to the people whom it is intended to protect, the records should be sufficiently convenient to permit of prompt reference. The entry of registration should not only be with the state board, but with and before the local registrar of legal records, whether it be county, town or district or other subdivision of the state existing. Also a record of registered names of the whole state should be accessible in each subdivision of records to permit of knowledge of the standing of any licentiate who may come from a neighboring or a distant county in the state.

How can the registration system of state boards be made more effective and of more practical value? This question is defective in the judgment of the members of the committee in that it implies that the system employed by the various state boards throughout the country is the same. This is not true at the present time. In all the states, prior to three years ago examinations were conducted wholly in writing. This system still prevails in a majority of the states and must continue to prevail in them until their laws are so modified as to give the boards larger discretionary powers.

Report of the Committee on Revocation of License and Penalties

In the absence of the chairman of this committee, Dr. E. L. Stevens, Iowa, the report was presented by Dr. B. R. McClellan, Ohio:

1. Should the state licensing board have power to revoke a license; if so on what ground? Yes, subject to an appeal by the defendant to the district court.

2. Should such revocation by the state board be subject to the review of the courts; if so, should this include only a review of the proceedings of the board, or should the review include the questions at issue and the evidence introduced? Yes, on appeal, in which case the courts should review the proceedings of the board and consider the merits and all the questions at issue in the case, with the thought of justice to all concerned and the further thought of protection of the public.

3. Should a model medical practice act impose a penalty for obtaining money from patients through false representation, as well as for practicing medicine without a license? Yes, the medical practice act should impose a penalty for obtaining money from patients through false representation. Such penalties, if possible, should require restitution as well as fines and imprisonment. Such penalty should be as severe, more severe than frauds, in banking or insurance.

4. What should be the penalty for practicing medicine without a license? Should it be fine, imprisonment, or both? Both fine and imprisonment.

5. What should be the penalty for falsely representing one's self to be a legally qualified physician? If this question be interpreted as implying that the one thus falsely representing himself also attempts to practice under such misrepresentation, he should be subjected as suggested in the answer to question three.

6. Should revocation of license be temporary or permanent? Either permanent or temporary, pending on the evidence and public welfare.

7. Should unprofessional conduct or criminal abortion be considered a justifiable cause for the revocation of a license? Yes.

8. What other causes should justify revocation of license? Perjury while on the stand as expert witness.

9. What penalty should be imposed on limited practitioners who exceed their functions? The same penalties as those for practicing without any kind of a license.

(To be continued)

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting held Feb. 9, 1910

The President, DR. HENRY LEFFMANN, in the Chair

INFANTILE SCURVY

The Cause and Symptoms of the Various Phases of the Disease

DR. J. P. CROZER-GRIFFITH: No disease is so easy to recognize or is so often mistaken by physicians as infantile scurvy. In the experience of the majority of observers it is a disease of the better social class. The most important factor is the food. In the series of cases collected by the committee of the American Pediatric Society the food employed when the child developed scurvy was sterilized milk alone in 68 cases; pasteurized milk alone in 16; breast milk alone in 10; ordinary milk alone in 4. There were many other cases in which sterilized milk was used but in combination with proprietary food. It is safe to conclude that the exciting cause of infantile scurvy is the employment of food, which is suitable for the individual child, but in which there is something lacking, or the presence of some detrimental element, the nature of which is not at all understood. That there must be also some individual predisposition is borne out in my observance of cases. It is a mistake to think that scurvy is a disease in which the gums become purple. They do become purple, but the man who waits for this symptom before making a diagnosis will make a mistake in many cases. The most frequent first symptom is pain, which is usually situated in the lower extremities and sometimes comes so suddenly that trauma is suspected. It is at first moderate, is intermittent and there follows the development of pseudoparalysis. In the involvement of the gums the swelling is sometimes so great that the teeth are obscured. It is a mistake to say that the gums are not involved when there are no teeth. The disease is a distinctly hemorrhagic one and hemorrhage from the kidneys is much more frequent than is ordinarily supposed. Anemia, cachexia and edema are not infrequently associated conditions. Moderate fever, diminished weight, and disturbance of the bowels are sometimes present.

Prognosis and Differential Diagnosis of Infantile Scurvy

DR. THEODORE LE BOUTILLIER: In the ordinary case seen early and not complicated by any intercurrent disease the prognosis is good. In cases seen late and in which no diagnosis, or an incorrect one, is made when the symptoms are advanced the prognosis is unfavorable. Death may be due to sudden hemorrhage, cardiac failure or exhaustion. It is important to lay stress on the diseases from which scurvy can be differentiated. The disease most often mistaken for it is rheumatism. About four-fifths of all cases of scurvy have at one time or other been diagnosed as rheumatism. It is well to emphasize the strong probability of scurvy in children under two years of age with pain and tenderness of legs with or without swelling near the large joints, and in the presence of spongy, swollen or purplish gums with tendency to hemorrhage. This is frequently corroborated by the history of artificial feeding. Rapid improvement on antiscorbutic diet will clear up all doubts.

Treatment of Infantile Scurvy

DR. MAURICE OSTHEIMER: The treatment of infantile scurvy is specific, *i. e.*, the administration of orange juice or other fruit juices. If the cause appears to lie in some proprietary food, condensed milk or sterilized milk, on which the infant has been fed, the food should be stopped, substituting for it uncooked milk. Recovery results rapidly in every case unless the diagnosis be made too late for the treatment to be effective. Drugs are of no value in infantile scurvy. In those rare cases in which the child is breast fed, having the mother eat several oranges a day benefits the child. Rest is essential with as little handling of the child as possible.

Discussion on Infantile Scurvy

DR. J. C. GITTINGS: The question of predisposition as well as the autointoxication theory is of importance. The bacterial theory could never be substantiated after the numerous failures to attach any one bacterium to the disease and particularly because of the fact that the cure is so certain in the use of orange juice. The comparative rarity of infantile scurvy is explained by the campaign waged against it.

DR. ALFRED HAND, JR.: The existence of this disease is one of the most important arguments for the necessity of clean certified milk. The treatment of the attack itself is, of course, only orange juice or fresh fruit juice of some kind. The treatment of the development of scurvy goes back to remedying all the wrongs in the care of the child, especially those of the diet. Baked potato has been claimed to be a specific given in connection with orange and other fruit juices.

DR. HENRY LEFFMANN: During several years service as port physician of the Port of Philadelphia I had opportunity to see many hundreds of sailors just after sea voyages. In all that time I recollect seeing only a few cases of scurvy and those not severe. These were on a ship that had been about six months coming from Calcutta. The shorter voyages of to-day and improved methods of food preservation have prevented the appearance of the disease which did so much harm in the days of the Tudors and Stuarts. The modern systems of food preservation do not, however, wholly overcome the tendency to scorbutic trouble. An explorer who spent four months in Alaska said that the warmest day was 31° below zero; the coldest 85° below. Severe scurvy occurred but the symptoms abated as soon as fresh food, even a few potatoes, could be obtained. The British maritime regulations require each vessel to carry lime juice as an antiscorbutic. It may be a question whether the extensive development of cold-storage systems may bring about a scorbutic condition not sufficiently marked to secure prompt or correct diagnosis. Ultimately, we may be worse off than under the régime of salicylic acid and sodium benzoate. We may have a sort of demographic scorbutic period and the maintenance of the public health will require still greater supervision than that now accorded to it.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

THE PUBLICATION OF A BULLETIN BY THE COUNTY SOCIETY

By Henry Glover Langworthy, M.D.

DUBUQUE, IOWA

There can be little question that every county medical society with a membership of forty-five or more would be greatly benefited by having some form of a regularly printed quarterly or monthly bulletin. The several reasons for the advocacy of such a plan are as follows:

1. The work, while naturally devolving on the society secretary, is not at all burdensome. A four-page bulletin (program and bulletin) would be sufficient.
2. The expense will be little more than publishing the average society program.
3. Interest in society work is apt to be increased in direct ratio as members are kept in touch with their own community.
4. The bulletin plan is probably the most practical way I know of raising the medical standards of a county.
5. I can attest that this method is successful, having followed it since December, 1907, as secretary of the Dubuque County Medical Society at Dubuque, Iowa.

The bulletin becomes at once the official program and bulletin of the society and as such is an index of the practice of medicine in the locality. It serves the double purpose of stimulating society life as well as issuing a warning against possible evil doers and certain unethical practices. The plan suggested may be roughly outlined as follows: For the initial year or eighteen months of its existence the bulletin should be a small one of not more than four pages and of sufficient size to readily slip into a letter envelope. This can be mailed unsealed. On the first page may be printed "Program of the ———— County Medical Society," followed by the name of the city, state, day of the week, month, year, and, for example, "At ———— Public Library, 8 p. m." The second page will naturally contain the full program of the meeting. At the bottom of the program page may also be stated that the meeting will be called to order by the president promptly at 8 p. m. Often it will be found advantageous to mention that the members of an adjoining county medical society are expected to be the guests of the evening. The upper part of the third page includes the complete list of the officers of the society. The remaining half of this third and all of the last or fourth page is to be used as the bulletin proper. The strictly bulletin part can be devoted to all sorts of miscellaneous medical news and society announcements.

My own monthly bulletin began by stating that the bulletin would be issued one week in advance of the meetings. Other news and notices were also included which seemed in keeping with early notices. The less complicated the beginning, I think, the less friction the strictly bulletin part is apt to encounter. Such announcements as, "Those who desire to exhibit pathologic specimens, etc., kindly notify the president or secretary at least ten days before the date set for meeting," tends to arouse interest and increase the attendance. Official notification by the treasurer and other officers fit in nicely. After three or four issues one cautiously begins the insertion of, perhaps, personal items concerning the men who are doing commendable work in one line or another. Personal mention, however, is often a prolific source of ill feeling.

In order to stimulate interest in the program itself, it may seem wise to mention that the program committee or the secretary is at work outlining the program for the ensuing year and that short papers on medical topics will be welcomed. On account of the limited time at the meetings no address or paper should occupy more than fifteen or twenty minutes in its delivery and no member be expected to speak longer than seven minutes in discussion. In small societies where the men are not engaged in original research the post-graduate course as outlined in THE JOURNAL of the American Medical Association may be followed in a general way.

The last month of every year the bulletin should publish a list of all county members with addresses. Notices of the county meetings in the vicinity I have found very good insertions for the bulletin part as they are always well received. Comments on such subjects as medical libraries, enlarging the membership, creating a state auxiliary laboratory if the place is large enough to warrant it, notes relating to society life, possible permanent headquarters for meetings, medical ethics, editorial remarks on many of the better papers presented, discussion of office business methods, nostrum evils, establishment of a public antituberculosis society, publication of portions of the revised by-laws, etc.—all will have their place as time goes on.

The censors will be found an excellent body to which doubtful bulletin insertions may be referred. An honest effort should always be made to avoid mistakes. It is surprising what can be accomplished with even a slight effort on the part of any progressive secretary, and the bulletin, no matter what its size, will be thoroughly appreciated by the entire membership after the publication has once been coming regularly. The criticisms (and there will be some according to the extent of selfish feeling of men who may consider their personal interest jeopardized) will really count for little. With tact and giving all an equal chance to read papers and appear prominently before the society the program and bulletin will soon be found a pleasure and well worth while.

A secretary carrying the above plan out in a conscientious manner will probably find it difficult to resign his position for years at least. It is surprising how far reaching even the simplest society organ becomes. If the society has a membership of forty-five and growing a bit, one hundred copies may be issued each month or quarterly and extra copies forwarded to men in adjacent counties who might probably attend if given the opportunity. Occasionally it is well to invite a few men from out of town to enjoy a good-fellowship dinner.

While I do not expect or advocate that every secretary shall become a medical editor, it would seem that a society of any size should be able to find some one interested enough in its general welfare to spend the time necessary for the work, not to mention the individual good resulting to the one taking it up. The bulletin plan is hardly called for in locations where the majority of members do not reside in the same town. Where a county is thinly settled and not more than three or four physicians are to be found together and members can meet each other only by driving long stretches, such a plan is hardly necessary, nor is the time yet ripe for it. Almost every city, however, with a registration of thirty physicians will find the program and bulletin plan well worth trying.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Seventh Month—Fourth Weekly Meeting

PROPAGANDA AGAINST TUBERCULOSIS (CONTINUED)

METHODS (CONTINUED): 3. *Treatment:* Establishment of dispensaries and clinics for tuberculosis. Clinics for adults, for children. Evening clinics for incipient cases. Free examinations. Dispensaries and sanatoriums, public and private, for charity cases, for those able to pay moderate fees. Tuberculosis classes. Day camps. Special relief of consumptives in their homes, paying rent, providing food, clothing, etc.

4. *Legislation:* Creating sentiment and securing enactment of legislation to control causes of contagion. Antispitting ordinances. Compulsory notification of cases. Inspection and disinfection of schools, factories, tenements, public conveyances, etc. Periodic examination of school children,

factory employees. Segregation of open cases of tuberculosis. Tenement house laws. Ventilation of schools, factories, public buildings. Regulation of bovine tuberculosis. Securing appropriations for clinics, dispensaries, sanatoria.

Monthly Meeting

What the County Society May Do to Prevent the Spread of Tuberculosis.

Status of Tuberculosis in this City (County).

The Early Diagnosis of Tuberculosis in Children.

The Practical Value of the Laboratory Aids in the Diagnosis of Tuberculosis.

Marriages

FRANCIS B. ROTHROCK, M.D., to Miss Nancy Ewing, both of Colorado Springs, February 23.

WALTER LLOYD FINTON, M.D., to Miss Ella S. Hobart, both of Jackson, Mich., February 16.

MARION COWAN, M.D. and Charles I. Burrows, both of Lynn, Mass., at Philadelphia, recently.

JOHN I. PENNINGTON, M.D., Baltimore, to Miss Blanche Bantz, at Annapolis, Md., February 17.

CHARLES LEROY LOWMAN, M.D., Los Angeles, Cal., to Miss Elizabeth Arnold, of Galesburg, Ill., recently.

Deaths

George G. Groff, M.D. Long Island College Hospital, 1877; formerly a member of the American Medical Association; a member of the Medical Society of the State of Pennsylvania, Association of Military Surgeons of the United States and American Academy of Medicine; professor of natural history and later of anatomy and physiology in Bucknell University, Lewisburg; assistant surgeon in the National Guard of Pennsylvania; major and brigade surgeon of volunteers during the Spanish-American War, and afterwards secretary and treasurer of the Superior Board of Health of Porto Rico; for several years president of the State Board of Health; a member of the State Board of Agriculture, and of the State Medical and Dental councils; coroner of Union county; and school director of Lewisburg; died suddenly at his home on College Hill, Lewisburg, February 18, from angina pectoris, aged 58.

Anson Hurd, M.D. Starling Medical College, Columbus, Ohio, 1852; Kentucky School of Medicine, 1882; a member of the Ohio State Medical Association; president of the Northwestern Ohio Medical Society in 1876; for several terms a representative in the legislature; assistant surgeon of the Twentieth Indiana Volunteer Infantry, and later surgeon of the Fourteenth Indiana Volunteer Infantry during the Civil War; for many years local surgeon of the Lake Erie and Western Railroad at Findlay, and for seven years secretary of the local board of pension examiners; for several terms a member of the city council; president of the board of trade in 1887; president of the Findlay Improvement Association in 1888; died at his home, February 18, from senile debility, aged 85.

James Enoch Tuell, M.D. Jefferson Medical College, 1884; a member of the American Medical Association; formerly president of the Kennebec County (Maine) Medical Association; and a member of the Maine Academy of Medicine and Science, and American Public Health Association; surgeon to the Augusta City Hospital; health officer of East Machias from 1890 to 1893, and a member of the Augusta Board of Health in 1895 and 1896; died at his home in Augusta, February 11, from pneumonia, aged 55.

Timothy Lawrence Barber, M.D. University of Pennsylvania, 1882; a member of the American Medical Association and American Electro-Therapeutic Association; ex-president of the West Virginia State Medical Association, Kanawha County Medical Society and Kanawha County Board of Health; for many years secretary of the local board of pension examiners; a member and formerly president of the West Virginia State Board of Health; died at his home in Charleston, February 24, from pernicious anemia, aged 56.

Christian Jonsson, M.D. Medical College of Reykjavik, Iceland, 1888; a member of the American Medical Association; a member of the staff of Mercy Hospital and president of the staff of Agatha Hospital, Clinton, Iowa; formerly president of the Clinton County Medical Society, and president of the local board of pension examining surgeons; from 1889-1891 surgeon on the Thingvalla Line; died in the Agatha Hospital, Clinton, February 26, from cancer of the stomach, aged 47.

Ezekiel W. Cooper, M.D. University of Pennsylvania, 1866; a member of the Delaware State Medical Society; for several years president of the State Board of Health; a member of the medical examining board of the state society; a member of the constitutional convention which framed the new constitution of 1896-1897; surgeon of volunteers during the Civil War; died at his home in Camden, February 21, from cerebral hemorrhage, aged 72.

Marion L. Hefflefinger, M.D. Kentucky School of Medicine, Louisville, 1887; a member of the State Medical Association of Texas; surgeon of volunteers during the Spanish-American War, and after its close, contract surgeon in the army with Philippine service; died February 17 at his home in Chicota, as result of injuries received in a railway accident, six months before, aged 43.

Charles George Burhenn, M.D. Western Pennsylvania Medical College, Pittsburg, 1899; a member of the American Medical Association; surgeon to the Pittsburg, McKeesport and Greensburg Street Railway Company; a member of the Jeanette (Pa.) Board of Education; died at his home, February 21, from septicemia, due to a bite on the finger from a diphtheria patient, aged 34.

Harleigh B. Hoechst, M.D. Maryland Medical College, Baltimore, 1900; Baltimore Medical College, 1901; a member of the Adams County (Pa.) Medical Society; assistant demonstrator of anatomy in the Maryland Medical College in 1900; a member of the Board of Health of the Borough of East Berlin; died at his home in East Berlin, February 24, from heart disease, aged 33.

Alonzo M. Barnes, M.D. Penn Medical University, Philadelphia, 1858; surgeon of the Third U. S. Colored Infantry during the Civil War; a member of the visiting and consulting staff of St. Luke's Hospital, Philadelphia; died at his home in that city, February 25, after an invalidism of two years from injuries received from a fall from a carriage, aged 72.

Edgar B. Shumway, M.D. Rush Medical College, 1874; a member of the American Medical Association; a member of the legislature in 1882 and of the state senate in 1884; formerly local surgeon for the Illinois Central and Big Four systems at Peotone, Ill.; died at his home in Chicago, March 2, from cerebral hemorrhage, aged 58.

Theodore S. Christ, M.D. University of Pennsylvania, 1860; assistant surgeon of the Fourth and Forty-fifth Pennsylvania Volunteer Infantry, and later brigade and division surgeon during the Civil War; president of the Center County Medical Society; died at his home in State College, Pa., February 16, from senile debility, aged 80.

Benjamin R. Parke, M.D. Jefferson Medical College, 1870; a member of the American Medical Association; a veteran of the Civil War; for twenty years a member, and at the time of his death president of the Wellsville (Ohio) Board of Education; died at his home, February 18, from cerebral hemorrhage, aged 67.

John Wilson Martin, M.D. New Orleans School of Medicine, 1846; one of the oldest practitioners of southeastern Arkansas; a Confederate veteran, and for several years president of the Merchants' and Planters Bank of Warren; died at his home in that city, February 11, from cerebral hemorrhage, aged 91.

Thomas Browning Mansfield, M.D. Medical College of Ohio, Cincinnati, 1878; a veteran of the Civil War; for many years a practitioner of Sac City, Iowa; local pension examiner for more than 25 years; died at his home in Ocean Park, Cal., February 11, from septicemia due to an operation wound, aged 65.

James M. O'Kelly, M.D. Kentucky School of Medicine, Louisville, 1877; a member of the Medical Society of the State of North Carolina; and at one time president of the Durham Medical Society; died at his home in that city, February 17, from chronic parenchymatous nephritis, aged 57.

Monroe Budd Long, M.D. College of Physicians and Surgeons, New York City, 1875; a member of the American Medical Association; dean of the staff of Muhlenberg Hospital, Plainfield, N. J.; twice coroner of Union county; died at his home, February 20, from heart disease, aged 60.

John A. Beauchamp, M.D. University of Nashville, 1861; a member of the American Medical Association; for many years superintendent of the Central Hospital for the Insane, Nashville; died in that institution February 25, from heart disease, following an attack of influenza, aged 70.

Frederick von Buelow, M.D. University of California, San Francisco, 1877; for nearly half a century a practitioner of San Francisco; died at the Central Emergency Hospital in that city, February 24, from the effects of a fall in which his skull was fractured, aged 79.

Charles F. Spangler, M.D. Jefferson Medical College, 1881; of Kane, Pa.; a member of the American Medical Association; consulting physician to the Kane Summit Hospital; formerly coroner of York county, Pa.; died in York, Pa., February 13, from heart disease, aged 50.

James Thompson, M.D. Jefferson Medical College, 1870; a member of the Missouri State Medical Association; professor of materia medica in the Medico-Chirurgical College of Kansas City, Mo.; died at his home in Kansas City, February 13, from heart disease, aged 65.

Augustus Richter, M.D. Pennsylvania Medical College, Gettysburg, 1851; an honorary member of the Medical Society of the State of Pennsylvania; and one of the founders of the National Science Association; died at his home in Williamsport, February 20, aged 87.

Frederick Austin Patterson, M.D. Central Medical College of St. Joseph, Mo., 1899; a member of the Missouri State Medical Association; acting superintendent of State Hospital for the Insane No. 2, St. Joseph; died in that institution, February 18, from uremia, aged 46.

George M. Reddish, M.D. University of Louisville, 1885; a member of the American Medical Association; a member of the school board of Somerset, Ky.; local surgeon of the Queen and Crescent Route; died in Oklahoma City, February 19, from facial erysipelas, aged 55.

William A. Miller, M.D. Missouri Medical College, St. Louis, 1897; a member of the Wyoming State Medical Society; local surgeon of the Burlington System and city physician of Sheridan; died in the Sheridan State Hospital, February 12, from peritonitis, aged 36.

George Monro Darrach, M.D. Pennsylvania Medical College, Gettysburg, 1850; formerly of Cumberland, Ind.; one of the organizers of the Marion County Medical Society; died at the home of his son in East St. Louis, Ill., February 25, from influenza, aged 83.

Chester E. Albright, M.D. Pennsylvania Medical College, Gettysburg, 1854; for more than fifty years a practitioner of Muncy, Pa.; a member of the Medical Society of the State of Pennsylvania; died at his home, February 2, from gastritis, aged 78.

John Emil Traub, M.D. College of Physicians and Surgeons, New York City, 1886; a fellow of the New York Academy of Medicine; assistant attending physician to St. Luke's Hospital; died at his home in New York City, Dec. 25, 1909, aged 45.

Neal McInnes, of Augusta, Ga.; chairman of the Jury Commission of Richmond county; a member of the board of education, and president of the County Reformatory Board; died in Walters Park Sanitarium, Pa., Aug. 25, 1909, from aneurism, aged 65.

Stanley H. Brooks, M.D. University Medical College, of Kansas City, Mo., 1885; of Mound City, Kan.; a member of the American Medical Association; died in the University Hospital, Kansas City, February 17, from gallstone disease, aged 46.

William David Williams, M.D. Kentucky School of Medicine, Louisville, 1889; of Olive Hill, Ky.; a member of the Kentucky State Medical Association; died in the Pope Sanitarium, Louisville, February 17, from cerebral hemorrhage, aged 54.

Richard F. Lamson, M.D. Cincinnati College of Medicine and Surgery, 1877; surgeon of volunteers during the Civil War; a practitioner of medicine for 48 years; died at his home in Bryan, Ohio, February 10, from senile dementia, aged 71.

Emma Josephine Miner Mitchell, M.D. University of Michigan, Ann Arbor, 1901; a member of the American Medical Association; died at her home in Lafayette, Ind., March 1, from septicemia, following an ulcerated sore throat.

Ora Clay Swift, M.D. University of Buffalo, 1900; a member of the Brooklyn Medical Society, and a member of the staff of the Bushwick and Mutual hospitals; died at his home in Brooklyn, Dec. 21, 1909, from pneumonia, aged 35.

James Whitsett Quinn, M.D. University of Nashville, 1855; chief surgeon of the Refugees' and Freedmans' Hospital, Little Rock, Ark., in 1864; died at the home of his daughter in that city, February 1, from senile debility, aged 81.

Theophilus P. Taylor, M.D. Eclectic Medical Institute, Cincinnati, 1881; formerly a member of the Ohio State Medical Association; died at his home in Celina, February 19, from cerebral hemorrhage, aged 51.

Joseph Melville Deacon, M.D. University of Vermont, Burlington, 1883; for several years in charge of a private hospital in Milltown, N. B.; died suddenly at his home in that place, February 20, aged 46.

Arthur Sinclair Kenaga, M.D. Rush Medical College, 1896; a member of the Illinois State Medical Society; of Kankakee; died at the home of his father in that city, February 26, from uremia, aged 35.

William Preston Lyon, M.D. Vanderbilt University, Nashville, 1900; a member of the State Medical Association of Texas; died at his home in Stone Point, February 20, from pneumonia, aged 34.

Willard Porter Woodbury, M.D. Harvard Medical School, Boston, 1904; a member of the Massachusetts Medical Society; died at his home in Beverly, Mass., February 26, from acute nephritis, aged 31.

Joseph Roberts Clausen, M.D. Jefferson Medical College, 1882; formerly a member of the Medical Society of the State of Pennsylvania; died at his home in West Philadelphia, January 8, aged 70.

John W. Redwine, M.D. Missouri Medical College, St. Louis, 1882; a member of the Illinois State Medical Society; died at his home in White Hall, February 12, from pulmonary tuberculosis, aged 51.

L. Barstow Irish, M.D. Berkshire Medical College, Pittsfield, Mass., 1861; Bellevue Hospital Medical College, 1862; died at his home in Brooklyn, N. Y., February 17, from arteriosclerosis, aged 76.

Harry J. Boyd, M.D. University of Maryland, Baltimore, 1888; of Belair, Md.; died in the Union Protestant Infirmary, Baltimore, February 14, three weeks after a surgical operation, aged 41.

John Skinner, M.D. Harvard Medical School, 1856; a member of the Massachusetts Medical Society; died at his home in Roxbury, Boston, Dec. 27, 1909, from cerebral hemorrhage, aged 85.

Samuel Warren Vance, M.D. Medical College of Ohio, Cincinnati, 1855; one of the oldest practitioners of southeastern Indiana; died at his home near Connersville, February 14, aged 89.

Burr Thad Wise, M.D. Southern Medical College, Atlanta, 1882; a member of the Medical Association of Georgia; died at his home in Plains, February 12, from pneumonia, aged 51.

Benjamin F. Johnson, M.D. University of Louisville, 1884; a member of the State Medical Association of Texas; died at his home in Stockdale, February 18, from pneumonia, aged 60.

James W. Swagerty (license, Texas, 1894); at one time an officer in the U. S. Marine-Hospital Service; died at his home in Groveton, Texas, February 10, from pneumonia, aged 41.

Leonard N. Miller, M.D. John A. Creighton Medical College, Omaha, 1908; died at the home of his mother in Kennard, Neb., January 21, from lymphosarcoma, aged 22.

Howard E. Munn, M.D. Eclectic Medical College of the City of New York, 1873; Toledo (Ohio) Medical College, 1884; died at his home in Toledo, Nov. 23, 1909, aged 59.

George W. Kirkland, M.D. Medical College of Georgia, Augusta, 1868; a Confederate veteran; died at his home in Summertown, Ga., February 20, aged 64.

William Carl Ziepprecht, M.D. Germany, formerly a surgeon in the German army; died at his home in Dubuque, Iowa, June 8, 1909, from angina pectoris, aged 82.

Walter Thomas McKnight, M.D. University of Nashville and Vanderbilt University, 1888; of Marlin, Texas; died in Austin, Texas, February 12, aged 50.

Thomas D. Williams, M.D. Hospital College of Medicine, Louisville, 1876; died at his home in Bardstown, Ky., February 14, from pneumonia, aged 70.

George Howard Palmer, M.D. New York University, New York City, 1884; died at his home in Brooklyn, February 18, from cerebral hemorrhage, aged 47.

Edward H. Osborne (license, Kan., examination, 1901); for thirty-seven years a practitioner; died at his home in Kansas City, Kan., Oct. 26, 1909, aged 69.

James G. Parshall (license, verification, Texas, 1908); a practitioner for 38 years; died at his home in Clifton, January 10, from diarrhea, aged 73.

Benjamin E. Throckmorton, Louisville Medical College, 1888; of McKinney, Texas; died in a sanitarium in Dallas, February 24, from heart disease, aged 44.

George F. Hamilton, M.D. Bennett Medical College, Chicago, 1870; a veteran of the Civil War; died at his home in Augusta, Wis., Dec. 30, 1909, aged 70.

Frank E. Matchette, M.D. Medical College of Ohio, Cincinnati, 1877; died at his home in Greenville, Ohio, February 16, from pneumonia, aged 59.

James Hennessy Hanley, M.D. Queens University, Kingston, Ont., 1900; of Watertown, N. Y.; died at his father's home in Ottawa, Ont., February 8.

Andrew Wailes Horton, M.D. University of Alabama, Mobile, 1899; of Pelham, Ala.; died in a sanitarium in Atlanta, Ga., February 25, aged 35.

Charles Henderson Watkins, M.D. Washington University, St. Louis, 1877; died at his home in Joplin, Mo., February 24, from uremia, aged 58.

George Little, M.D. Eclectic Medical Institute, Cincinnati, 1883; of Crawford, Ga.; died in a sanitarium in Atlanta, February 17, aged 45.

John Morrison, M.D. McGill University, Montreal, 1872; died at his home in Pierson, Man., January 26, from acute gastritis, aged 67.

William Ward, for nearly 70 years a practitioner of Ohio; died at his home in Harveysburg, Dec. 10, 1909, from angina pectoris, aged 88.

Jesse Russell, M.D. University of Louisville, 1870; died at his home near Allensville, Ky., January 21, from heart disease, aged 61.

Josephus Goodenough, M.D. Eclectic Medical Institute, Cincinnati, 1858; died at his home in Clarkston, Mich., February 18, aged 79.

Henry Paul Lewandowski (license, examination, 1874); of New York City; died in the Sydenham Hospital, Dec. 4, 1909, aged 61.

Daniel Stone Lyman, M.D. Medical College of Ohio, 1847; died at his home in Goshen, Ohio, February 27, aged 88.

Walter Franklin Weber, M.D. University of Maryland, 1909; died at his home in Oakland, Md., February 9, aged 25.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 4-5. Sec., Dr. Ancil Martin.
CALIFORNIA: San Francisco, April 5. Sec., Dr. Charles L. Tisdale, 929 Butler Building.
COLORADO: Denver, April 5. Sec., Dr. S. D. VanMeter, 1723 Tremont Place.
FLORIDA: Jacksonville, April 4-5. Sec., Dr. J. D. Fernandez.
IDAHO: Boise, April 5. Sec., Dr. O. J. Allen, Bellevue.
MINNESOTA: State University, Minneapolis, April 5. Sec., Dr. W. S. Fullerton, 214 American Nat'l Bank Bldg., St. Paul.
MONTANA: The Capitol, Helena, April 5. Sec., Dr. W. C. Riddell.
NEW MEXICO: Santa Fe, April 11-12. Sec., Dr. J. A. Massie.
NORTH DAKOTA: Grand Forks, April 1-4. Sec., Dr. H. M. Wheeler.
OKLAHOMA: Ione Hotel, Guthrie, April 12. Sec., Dr. Frank P. Davis, Enid.
RHODE ISLAND: State House, Providence, April 7-8. Sec., Dr. Gardner T. Swarts, Room 315, State House.
WEST VIRGINIA: Wheeling, April 12-14. Sec., Dr. H. A. Barbee, Point Pleasant.

The Teaching of Pediatrics

The following communication, which will explain itself, is an important addition to the present active discussion of the medical curriculum. Particular attention is called to paragraph *h* referring to a hospital and dispensary for children as a chief essential in the teaching of pediatrics by any medical school:

To the Editor:—The Committee on Teaching of Pediatrics appointed by the Association of American Teachers of the Diseases of Children at its meeting in Chicago, June 1, 1908, made a preliminary report at the meeting of that body in Atlantic City, June 7, 1909.

The objects of this committee were "To secure detailed information as to the present status of the teaching of pediatrics in this country; to define its proper scope; to determine an ideal and also a minimum syllabus for the teaching of pediatrics in our medical colleges; to confer with the Association of American Medical Colleges, with the Council on Medical Education of the American Medical Association, and with the Confederation of State Boards of Examination and Registration, with a view of securing adequate place and time in college curricula, and state examinations in this branch, and to regulating the conditions of the clinical facilities and the equipment necessary for the proper teaching and study of children and their diseases."

The report of the committee embraced numerous data collected from teachers in forty American medical colleges, and other sources, and its details are too voluminous for insertion here. The committee consisted of the following teachers: S. W. Kelley, Cleveland College of Physicians and Surgeons; A. C. Cotton, Rush Medical College, Chicago; H. M. McClanahan, University of Nebraska, Omaha; W. C. Hollopeter, Medico-Chirurgical College, Philadelphia; W. W. Butterworth, Tulane University, New Orleans.

The report, which was received and adopted unanimously by the association, concluded as follows:

(a) Every medical school should have a chair of pediatrics. It should be a full professorship, quite independent; i. e., not subordinate to any other chair.

(b) Pediatrics should be compulsory; i. e., required for graduation.

(c) The number of men on the teaching staff may vary in different schools according to the number of students, but the teaching force should be large enough to devote personal attention to the work of each student.

(d) Exact time allowance has not been figured precisely from our data collected from teachers. It should be as much as that devoted to any other practical branch. Ten per cent. of the third and fourth years, or certainly not less than 190 hours, should be the minimum.

(e) Pediatrics should be studied in both the junior and senior years, the course being graded.

(f) The course should include the anatomy, physiology and all the ordinary abnormal conditions of infancy and childhood, both medical and surgical. When preferred the surgical side may be taught in the department of surgery, but it should not be ignored or only casually referred to as it usually has been. At some future time it may prove expedient to introduce a special course in anatomy into the department of anatomy, as some colleges are now giving special attention in the anatomic department to surgical anatomy, brain and nerve anatomy, etc. It is quite as essential that the special anatomy of the developing period should be presented.

(g) Didactic lectures still have a useful place; but a large part of the teaching should be clinical, both in hospital and dispensary. The class should be divided into sections of not more than ten or twelve students for most effective clinical teaching, giving the student actual experience under the teacher in handling the patients.

(h) Clinical cases in ample numbers and variety to illustrate the hygiene of normal infancy and childhood and all the ordinary malformations, injuries and diseased conditions, including the contagious diseases, are a necessity. We find more schools open to criticism for lack of clinical material and its proper utilization than for any other short-coming. This lack of clinical facilities is most frequently noticeable in regard to the contagious diseases. No college without a hospital or dispensary for children is prepared to teach pediatrics.

(i) A separate laboratory of pediatrics is not a necessity, but laboratories for general medical and surgical examinations should be available and be supplemented for the pediatric work.

(j) The anatomic and pathologic museums should be supplied with specimens, and the college library with text-books, reference books and periodicals on pediatrics.

ALFRED C. COTTON, President, Chicago.

Book Notices

IMMUNITY AND SPECIFIC THERAPY. By W. D'Este Emery, M.D., B.Sc., Clinical Pathologist to King's College Hospital and Pathologist to the Children's Hospital, Paddington Green. Cloth. Pp. 448, with illustrations. Price, $3.50 net. New York: Paul B. Hoeber, 1909.

Emery's book is an excellent presentation of the main facts, principles and theories concerned in these subjects of immunity and specific therapy. From the literary point of view it is unusually good, considering that the subjects are difficult to present interestingly. Its interest and instructive value are further increased by the many apt illustrations and analogies which the author has at his command.

The first chapter, "Introductory and General," defines immunity and considers the various types, as natural and acquired, active and passive, mixed immunity and local immunity; discusses the character of the virulence of microorganisms and the means of increasing it or lowering it for purposes of vaccination; and, finally, devotes two pages to the theories of immunity. Emery's definition of immunity seems very wide in at least this regard: that he sometimes refers to the non-occurrence of a disease (as gout) as indicating immunity on the part of those concerned, whereas it is just as reasonable to suppose that the individuals are free from the disease because the causative conditions are not present. The discussion of the different types of immunity to bacterial diseases is excellent. In the second chapter, on the "Nature of Toxins," the subject is considered under the two headings of "exotoxins" and "endotoxins." The various specific and cytolytic bacterial toxins are described, and the author leans to the view that the endotoxins are true specific toxins, for which it may be possible to obtain specific antitoxins. The third chapter, "The Phenomenon of Antitoxin Formation," would seem to be mislabeled, since it really deals with the means by which antitoxins may be produced practically, referring only incidentally to the antitoxin "curve" in the immunized horse.

In discussing the "Interreactions of Toxin and Antitoxin" (Chapter 4), the complicated theories and experiments which led Ehrlich to his conclusions regarding the constitution of toxin and antitoxin are presented in a good deal of detail and for the most part with clearness. There is some evidence of careless proofreading on page 78, where it would seem that "c.c." is used in several places where "parts" is intended, and at the top of page 79 where "antitoxin" seems to have been used accidentally instead of "toxin." The physico-chemical view of Arrhenius and Madson, and the absorption theory of Bordet are given some consideration.

Ehrlich's theory is dealt with in a special chapter (5) entitled "The Origin of Antitoxin—The Side-Chain Theory." It is a clear statement. "Immunity to Toxins" is described under three headings: (1) Active, as in disease or in vaccination; (2) passive, as in the administration of antitoxin; and (3) those cases of natural immunity to toxins which are not accompanied by the presence of antitoxins in the blood. The next three chapters deal with "Bacteriolysis and Allied Phenomena" (hemolysis, etc.), "The Agglutinins" and "The Precipitins." Phagocytosis is dealt with rather extensively, from a description of Metchnikoff's first observations on the daphnia, to the more recent data on the opsonins. Credit seems to be given rather grudgingly to Denys and LeClef and others for their pioneer work on the influence of serum on phagocytosis, which, together with the method of Leishman, is really at the basis of the colossal reputation built up by Wright through the invention of the opsonic index and its vigorous exploitation. Reversing the expression used by Emery, it may be said that the invention of the opsonic index and the advocacy of vaccine therapy on a broader scale in no way detract from the importance of the fundamental observation of Denys and LeClef, namely, that some property of the serum is of the utmost importance for phagocytosis. The aggressins are discussed in this chapter, which, throughout, holds the interest of the reader.

Two chapters of particular interest are those on "Reactions and Similar Phenomena" and the "Colloidal Theory of Immunity." In the former the tuberculin reaction in its various forms, the complement fixation reaction for syphilis, von Pirquet's conception of "allergie," anaphylaxis, and the serum disease are discussed; in the latter, the properties of colloids, and certain analogous properties in relation to immunity reactions. A chapter on "Immunity to Bacteria" is followed by a section on "Practical Applications," in which some of the more important infections in their relation to immunity are considered.

The book is a valuable addition to those which offer a summary of the subject of immunity.

FOOD INSPECTION AND ANALYSIS. By Albert E. Leach, S.B., Chief of the Denver Food and Drug Inspection Laboratory, Bureau of Chemistry, U. S. Department of Agriculture. Second Edition. Cloth. Pp. 929, with 278 illustrations. Price, $7.50. New York: John Wiley & Sons, 1909.

This book is intended for public analysts, health officers, sanitary chemists and food economists, and its claimed purpose is not to go beyond the strictly chemical and physical processes involved in making the analyses by which the proximate components of the food are determined. This purpose in the present work has especial reference to adulteration, sophistication, substitution, the addition of more or less harmful preservatives, and the other more or less subtle methods of manufacturers and firms or individuals engaged in the preparation of beverages, foods and food-products. Diet and metabolism are not discussed, but the work of Atwater and his co-workers is mentioned. Methods of manufacture or preparation of foods and beverages are given briefly, and complete working directions for the analysis of every class of foods and drinks and approved tests for the detection of impurities, adulterations, coloring-matters, preservatives, etc., are set out. The work has numerous illustrations of apparatus and abounds in tables of reference, percentage tables, etc., and contains 40 pages of photomicrographic plates of the histologic structure of the various grains. The descriptions of chemical processes, methods of analysis and tests are clear, and nothing seems to have been overlooked to make the book a practical working exposition for the food analyst. There is not a great deal of critical comment in the book on the effects of adulterations, etc., the aim being simply to state the facts. An exception, however, is found in the case of meat-extracts and meat-juices; the author calls attention to the rather wide discrepancy between the claims of some manufacturers as to their products and the results of their analysis. Meat-extracts, he says, have practically no food-value and are useful only as stimulants, much like tea and coffee. He finds that commercial meat-juice is far different in composition and food-value from the juice made in the laboratory, and says that it appears to be impracticable so to preserve true meat-juice that it can become an article of commerce. That it should require a book of 954 pages to set out the adulterations and sophistications of products including every form of food used by man, and the methods for the detection of such adulterations and sophistications, is a rather severe commentary on the ethics of business. A reading of the book suggests that a large number of men from technical schools are devoting much energy, ingenuity and ability to the more or less devious methods of food sophisticators. Even a superficial reading of this book by the physician will be useful and suggestive to him of the possible etiology of much of the morbidity with which he comes daily in contact. It is a complete book on a subject that calls for unceasing vigilance on the part of officials and others interested.

CLINICAL EXAMINATION OF THE URINE AND URINARY DIAGNOSIS. By J. Bergen Ogden, M.D., New York, N. Y., Medical Chemist to the Metropolitan Life Insurance Co., N. Y. Third Edition. Cloth. Pp. 427, with illustrations. Price, $3 net. Philadelphia: W. B. Saunders Co., 1909.

That three editions of this popular and well-known book have appeared in such a short time is sufficient evidence of its merit. The subject-matter has been brought up to date by the omission of much unnecessary and unimportant material and by the addition of many of the newer and more important tests for various normal and abnormal constituents of the urine. It is true that many accurate, reliable, and satisfactory tests are omitted; but this should not militate against the usefulness of the book, as it is to be remembered

that an author necessarily recommends those tests and methods which he himself has found to be the most satisfactory for such work. If the student, general practitioner, or specialist masters the examination of the urine as outlined by Ogden, he need have no fear of getting into difficulties in his clinical examinations. The details of the various tests and methods are given in a clear and concise manner, so that no doubt should exist on the part of the worker as to the methods to be followed. The clinical significance of the various urinary findings is given in sufficient outline to permit of the proper interpretation of abnormalities.

In the sections treating of the urinary changes in various pathologic conditions, both renal and general, one will find a thoroughly up-to-date treatment of such variations. This section should be especially valuable to the practitioner, who is frequently at a loss to interpret his findings and who is rarely cognizant of the physiologic variations in such a complex fluid as the urine. This phase of urinary examinations is too often insufficiently discussed in text-books.

In this edition, Ogden has taken the opportunity of adding a section of 13 pages on the "Examination of the Urine for the Purpose of Life-Insurance." Here many important points are brought out which should be absorbed by all having to do with such details. It is, doubtless, true that many examinations of the urine are of little value, and, indeed, often farcical and unreliable for the purpose of establishing the value of a "risk," yet this is unquestionably due to the gross ignorance of the examiner and is no reflection on the conscientious physician, who does his work carefully and who knows how to interpret his urinary findings in the light of the clinical examination of the applicant.

The typography of the book is excellent and its illustrations numerous, accurate, and thoroughly satisfactory. The arrangement of the subject-matter is admirable. The diction is clear and concise and the text is extremely orthodox in its teaching. This work is highly commended both to the student and practitioner.

SMALLPOX AND VACCINATION IN BRITISH INDIA. By S. P. James, M.D., London, D.P.H., Major, Indian Medical Service. Cloth. Pp. 105, with 14 diagrams. Price 7 shillings 6 pence. London: W. Thacker & Co., 2 Creed Lane, 1909.

This volume contains in convenient form a compilation of the government reports regarding vaccination in India. As the author remarks in the preface, "in all countries in Europe where vaccination has been extensively carried on, an appeal to the figures of smallpox mortality has given in favor of the practice an answer as unequivocal as it is satisfactory and it is obviously of great interest to ascertain whether a similar answer results from inquiry in a country like India where the difficulties attending the introduction and progress of vaccination have been enormously greater than in Europe."

Among the difficulties enumerated are the enormous population (230,000,000 of people) scattered over a territory of more than a million square miles; the fact that only 5 or 6 per cent. of the natives can read or write their own language and that the great majority of them, beside being exceedingly ignorant and childish, are so apathetic that they take advantage of protective measures only when they are free of cost and are brought to them. Beside the fact that nearly all the natives of India are suspicious of any measure not sanctioned by the custom of ages and are especially suspicious of any measures advocated by the British government, there is the additional difficulty to overcome that, since very early times, the people of India have worshiped a goddess of smallpox and that certain castes regard it as a religious duty to take no precautions whatever against the disease, its visitation being regarded as a sign of the favor of the goddess. Dr. James mentions many other curious superstitions of the native population which form additional obstacles.

The introductory chapters of the book are devoted to a historical sketch of smallpox and of smallpox inoculation, and of previous attempts at vaccination in India. In Chapter 4 the value of vaccination in India is considered. This chapter is plentifully interspersed with statistics and graphic tables showing the annual smallpox mortality in the various provinces for a long period of years. By way of contrast, the smallpox death-rate in the early years of the nineteenth century is quoted, showing that in Calcutta in 1833, the death-rate from smallpox was 11,796 per million, and that in 1850 this disease caused nearly 47 per cent. of all the deaths in Calcutta. Tables for each of the provinces are given, showing the reduced mortality from 1868-75, when vaccination was first undertaken in any systematic manner, to the present time, when the mortality reports show its ravages to be greatly diminished. In reply to the usual antivaccination argument that the enormous decrease following vaccination is due to "improved sanitary conditions," the author shows that cholera and other epidemic diseases have remained stationary or have increased in virulence during the same time.

Major James' book should be read by every one interested in the prevention and extermination of smallpox.

STUDIES IN IMMUNITY. By Prof. Jules Bordet, Professor of Bacteriology at the University of Brussels, and his Collaborators. Collected and Translated by Frederick P. Gay, A.B., M.D., Instructor in Pathology, Harvard Medical School. First Edition. Cloth. Pp. 529. Price, $6. New York: John Wiley & Sons, 1909.

When we consider that it was Bordet who discovered that the action of a bacteriolytic serum depended on the combined effect of two substances in the serum (the substances which afterward became the amboceptor and complement of Ehrlich); that he was the first to recognize the phenomenon of specific hemolysis by serums and its dependence on two substances of the same type; that he has made contributions of fundamental importance to the subjects of agglutination of bacteria, the action of antitoxins on toxins, and phagocytosis; that, with Gengou, he made certain observations on the fixation of alexin (complement) which later (in the hands of Wassermann) grew into the hemolytic or complement fixation test for syphilis; that he and Gengou have discovered what they believe to be the micro-organism of whooping-cough; and, finally, that he stands as the most prominent and most consistent opponent of the side-chain or chemical theory of immunity proposed by Ehrlich—when we consider these achievements, we cannot fail to have a sense of gratitude that Bordet consented to the collection and publication of this series of thirty papers, which include those of greatest importance by Bordet and those who have worked with him or under his direction.

By way of throwing light on this most interesting man of science, the following may be quoted from Dr. Gay's preface: "Although for more than fifteen years a protagonist in the modern development of immunity, Bordet has continued an investigator instead of becoming a generalizer; he has been led by thoroughness of observation and brilliancy of inductive reasoning to the collection of successive significant facts rather than to the assimilation of scattered data in support of a preconceived theory. Whereas others have been willing to venture more fully explanatory theories of immunity, Bordet, although contributing a disproportionate number of important facts, has contented himself with the hypotheses which bridge from one experiment to another, and has fully realized the necessarily fragmentary nature of our present knowledge in this field of science."

There is no need to discuss the individual papers which are reprinted, in English, in the volume. It is sufficient to state that among them are the original articles in which some of the most important phenomena of immunity were first described.

The last chapter of the book consists of "A General Résumé of Immunity," by Bordet, written expressly for this volume. It is particularly welcome, since it summarizes in a very clear manner the objections which Bordet proposes to the theory of Ehrlich, and describes the alternative hypotheses which he entertains in explaining the phenomena of immunity and serum reactions.

A study of the papers and of the "Résumé" must heighten the respect which the scientific world at present entertains for Bordet, and the work should be the means of affording greater publicity to the views held by the scientist.

AIR AND HEALTH. By Ronald Campbell Macfie, M.A., M.B.C.M., Author of "The Romance of Medicine," etc. Cloth. Pp. 328. Price, $2.50. New York: E. P. Dutton & Co., 1909.

In this day when the importance and value of fresh air and the fresh-air treatment of disease are so clearly recognized a work on air and health is timely. This book treats of fresh air more with reference to the improvement of the general health and well-being of communities and individuals, than in

the treatment of particular diseases, such as tuberculosis. The author believes that while treatment of tuberculosis in sanatoria will benefit a few individuals, and its educational value to the general public is great, yet more could be accomplished by establishing open-air schools for children, and he gives examples and results of experimental schools of this sort established at various places in Europe.

The book deals with the physics and chemistry of the air and atmosphere, respiration and its physiology, air pressure, temperature, humidity, solar radiation, radioactivity, electricity and air, etc., and then takes up impure air, smoke, fog, gases in mines, sewer air, dust and germs, ventilation, breathing, artificial atmospheres, climate, and, briefly, open-air treatment of "consumption." The author in a sensible way explodes many of the theories of physical-culture faddists and others regarding the development of the chest breathing exercises, and shows that a big chest is not necessarily an indication of vital capacity, and that oxygen intake depends on the activity of metabolism. In a study of the various substances polluting the air, he cannot make a strong showing against any one of them, but affirmatively he emphasizes the salutary effects of fresh, pure air, and therefore makes a strong plea for the open window and open-air life. The chapter on climate is interesting, but only the higher Alps, the sea and Africa are mentioned, as might be expected from a British author; Colorado and California are mentioned only incidentally in a quotation.

Much of the statistical and tabulated matter is old, and although the title-page says the book was first printed in 1909, and the author seems to be conversant with the recent work and investigations, yet the book gives one the impression of being rather ancient history. For instance, a table showing the annual death-rate in London from phthisis dates back to 1898.

OPHTHALMIC SURGERY. A Treatise on Surgical Operations Pertaining to the Eye and its Appendages with Chapters on Para-Operative Technic and Management of Instruments. By Charles H. Beard, M.D., Surgeon to the Illinois Charitable Eye and Ear Infirmary. Cloth. Pp. 674, with 9 plates and 309 other illustrations. Price, $5. Philadelphia: P. Blakiston's Son & Co., 1910.

This book is the fruit of twenty-six years of study and work in hospitals, dispensaries and private practice. The chapters dealing with the subject of preparation for the operation, including the preparation of surgeons, assistants, patient, instruments, dressings, etc., and the selection and care of instruments are particularly valuable, especially to younger practitioners of ophthalmology. The consideration of operative procedures is made interesting and instructive by a concise and clear account of the history of such operations, showing how in many instances there has been gradually evolved that measure which, in the judgment of the author, is the best.

The careful description of the technic is commendable, and the liberal and excellent photogravure illustrations add greatly to the practical descriptive matter. Special mention should be made of the chapter on plastic operations on the eyelids and of that on cataract extraction. The author's experience in the treatment of deformities of the lids as surgeon to the Illinois Eye and Ear Infirmary, enables him to speak with authority on this difficult subject. The various methods that have been proposed for the correction of entropion and ectropion are well described. The chapter on "Extraction of Cataract" receives added value from a recital of the accidents and complications that may occur in the course of the operation and the preventives and remedies that apply to them.

Altogether, it is one of the best books on the subject in the English language, and is especially valuable in that it reflects so well the practice of modern American ophthalmic surgery.

DIAGNOSTIC METHODS, Chemical, Bacteriologic and Microscopic. By Ralph W. Webster, M.D., Ph.D., Assistant Professor of Pharmacologic Therapeutics and Instructor in Medicine in Rush Medical College, University of Chicago. Cloth. Pp. 611, with 211 illustrations. Price, $6.00 net. Philadelphia: P. Blakiston's Son & Co., 1909.

The author has succeeded in giving a practical exposition of laboratory diagnostic methods, including many which are not ordinarily found in such books, as for instance, the methods of examining the secretions of the nose and conjunctiva. The section of the blood is especially complete. Along with the methods described, the author has endeavored —and successfully—to present sufficient physiologic and clinical facts to enable just conclusions as to the value and bearing of the various methods on diagnosis; and in some places he has not hesitated to express his very decided opinion of the unavailability of some modern methods, especially, for instance, the methods of determination of the functional capacity of the kidney. Cryoscopy, electric conductivity, and the methylene blue tests are unhesitatingly condemned. Webster regards the phloridzin test as the best one advanced which can in any way aid the diagnosis. He concludes that for the medical man these tests are rarely of value; but admits their utility for the surgeon. We are glad to see emphasis laid on the necessity of control of the diet in order to make quantitative determinations of urea valuable. The book is finely illustrated, to a large extent by original drawings, and a large number of illustrations are presented as colored plates. The book will be highly appreciated by those who desire a guide to the most recent methods of diagnosis, and can be commended especially on account of the accuracy and clearness of the description of these various methods.

UMWELT UND INNENWELT DER TIERE. Von J. von Uexküll, Dr. med. Lon. c. Paper. Pp. 259. Berlin: Verlag von Julius Springer, 1909.

This book is a review of the physiology of the invertebrates. It is written by one of the Heidelberg group of neo-vitalists and is interesting as showing how the life processes of these animals look from their standpoint. Besides his own observations, the author gives a review of the literature, defining the position of the various writers in reference to his own conceptions. The nervous system is especially considered, and the relation of the animal to its environment is studied in each form. This makes the work especially valuable to psychologists and neurologists.

Vitalistic conceptions are discussed at length, the author believing that some vital force, neither physical nor chemical in nature, is an important factor in every biologic process. The work of biologists in the past is destructively criticized because they did not consider vitalism more and physics and chemistry less.

The book is attractively written, and those who are interested in the subject and who read German, will find in it much to provoke serious and thoughtful consideration, even though they may not be in sympathy with some of the iconoclastic speculations.

INDEX DU PROGRÈS MÉDICAL, 37me Année, 1909-1910. Cloth. Pp. 1016. Paris: Progrès Médical, 41 rue des Ecoles.

This is an expansion of the annual students' and practitioners' number of the *Progrès Médical*, and contains a variety of statistics and useful information. The first part consists of a collection of laws governing the French universities, the outlines of the organizations of the educational and affiliated institutions in Paris, including the University of Paris, the Sorbonne, the military and naval medical schools, the hospitals and clinics, the schools for nurses, the insane asylums, the schools for backward children, the private courses of medical instruction, medical and scientific societies, the dental and veterinary schools in Paris; the second part covers the same subjects for the provinces and colonies, and in addition gives the names of the principal French medical journals. The third gives a verified official list of French physicians. The fourth part gives a list of the principal medical schools throughout the world, with their faculties, and considerable other information. The fifth part contains a compendium of legislation and administrative orders bearing on the medical profession in France.

A TEXT-BOOK OF MEDICAL TREATMENT. (Alphabetically arranged.) By William Calwell, M.A., M.D., Physician, Royal Victoria Hospital, Belfast. Cloth. Pp. 630. Price, $4.50. New York: Longmans, Green & Co., 1910.

This book, the author tells us, is the offspring of twenty years' experience in teaching the principles as well as the application of modern therapeutical knowledge. The work has been done with the aid of a number of collaborators. The arrangement is alphabetic, and includes the ordinary scope of internal medicine and the diseases of the skin. The treatment includes hygienic, dietetic and physical measures, as well as drugs.

Medicolegal

A Sponge Case in the Federal Courts

The United States Circuit Court of Appeals, Eighth Circuit, says that the case of Ruth vs. Johnson (172 Fed. R., 191) was brought by the latter party to recover damages which he claimed he suffered by reason of the negligent performance of an operation on him for appendicitis, the act of negligence specified being that the defendant unskillfully, negligently, and inattentively permitted a sponge or pad of gauze to remain in the abdominal cavity after the sewing up of the wound.

The operation was performed March 30. When the defendant opened the abdomen, he found extensive adhesions caused by frequent recurrences of the attacks of appendicitis. He immediately placed pads of gauze in the opening to wall off the infected area. The appendix was then brought up, the cecum with it, and as the appendix was brought up the sack ruptured, and the defendant called to his assistant to get a pad quick. The assistant got the pad, and the defendant called for another. Another pad was gotten and placed in the body. The defendant did not remember how many pads he put into the abdomen. The case was one known to surgery as a pus case. When the defendant had finished the operation, the sponges or pads of gauze that were removed were dropped into a tub. A stab drain was put in so as to give a direct outlet from the cavity.

About two weeks after the operation a lump formed at the lower end of the main incision, and kept getting larger until it was about the size of a hen's egg. The defendant, on examination, decided that it was an abscess, and treated it as such by opening it and putting in a tube. He also instructed the plaintiff's home physician to treat it as an abscess, after he left the hospital, May 2, and it was treated, as also the stab wound, with pieces of gauze one-fourth of an inch wide and four or five inches in length, although sometimes the pieces of gauze were eight or ten inches long, but narrow. But the condition of the patient kept getting worse, until July 7, when another surgeon, assisted by the attending physician, opened the abdominal cavity by cutting down so that the end of the incision that was made united with the lower end of the original incision made by the defendant. The surgeon introduced his finger and could feel gauze. He then put in his forceps and pulled out the gauze in question, of which 2½ or 3 inches had penetrated the ascending colon. On January 1 the wound had healed.

The evidence further tended to show that the size of the piece of gauze taken out was 9½ by 11½ inches. That the pads used at the time of the operation by the defendant were from eight to ten inches square. That with free open drainage such as existed in this case the gauze could have remained in the abdominal cavity without any further disturbance than did actually occur. That the gauze pad had been in the abdominal cavity from 90 to 100 days. That, after the plaintiff went home, there never was at any time prior to the operation last mentioned an opening in his abdomen large enough to have permitted the introduction of the pad of gauze removed therefrom. That the presence of the gauze in the abdominal cavity was the cause of his illness subsequent to the operation for appendicitis.

There was also evidence tending to show that all of the pads of gauze that were placed in the abdominal cavity of the plaintiff at the time of the operation for appendicitis were removed, but no witness had any actual knowledge as to whether they were or not. The defendant testified himself that he did not know how many pads were placed in the abdominal cavity, and the nurses who seemed to have charge of furnishing the pads or sponges at the hospital could only testify that the pads were removed by reason of the fact that they were always removed in every case. No witness had a distinct recollection of what was actually done in this particular case with reference to removing the gauze pads.

It thus appeared that when all the evidence was in there was one question for the jury, and that was, Did the defendant sew up the wound after his operation on the plaintiff and allow a pad of gauze 9½ by 11½ inches to remain in the abdominal cavity? This was the only question left to the jury by the court; it being conceded that, if the defendant did do this, he was guilty of negligence. The jury found the issue submitted to them in favor of the plaintiff and against the defendant, and no court would be authorized to say that there was not sufficient evidence to support their finding.

Then it was assigned as error to allow three physicians to answer hypothetical questions in the following language: "Assuming that an operation was performed for appendicitis, and the main incision was closed up and a stab wound made with a drainage tube in it, and a pad of gauze 9½ by 11½ inches was sewed up in the wound and remained there for a period of about 98 days, state whether or not to leave it there that length of time would be the exercise of ordinary care, skill and attention on the part of the surgeon in charge of the operation." But even if the questions in the form they were put were for the jury and not for the witnesses, which the court does not stop to determine, the court is constrained to hold their allowance was not prejudicial error for the reason that there could be no contention, and counsel for the defendant made none, that the placing of the gauze pad in the abdominal cavity of the plaintiff and leaving the same there after the operation for appendicitis would not be an act of negligence. The only question over which there was a contest in the trial of the case, and the only question submitted to the jury for decision, was as to when and where and by whom the gauze was put into the cavity and allowed to remain.

Wherefore, a judgment for the plaintiff (amount not stated) is affirmed.

Validity of Statute and Grounds for Refusal of Verification License

The Court of Civil Appeals of Texas says that the case of Morse vs. State Board of Medical Examiners (122 S. W. R., 1461) was brought by said Morse to compel the board to issue to him a verification license to practice medicine. The defense was that he had been guilty of grossly unprofessional or dishonorable conduct, of a character likely to deceive and defraud the public, section 11 of the medical practice act of April 17, 1907, being relied on to support the position taken. This section provides that the board may refuse to issue the certificate provided for in case of the presentation of a license, certificate or diploma illegally or fraudulently obtained, or when fraud or deception has been practiced in passing the examination; for conviction of a crime of the grade of a felony, or one which involves moral turpitude, or procuring or aiding or abetting the procuring of a criminal abortion; or for "other grossly unprofessional or dishonorable conduct of a character likely to deceive or defraud the public," etc.

It was contended that this last clause was too general and uncertain, and that it should therefore be disregarded and the statute administered as though the clause were eliminated therefrom, but the court does not think the statute subject to the objection urged against it, and affirms a judgment for the board.

An important distinction, the court says, exists between granting a license and revoking a license, which distinction may justify the application of different rules of law. Many courts hold that the cancelation or revocation of a license to practice medicine constitutes a penalty; but such result does not follow from a refusal to grant such license. A license to practice medicine is a privilege or franchise granted by the government, and a refusal to grant such franchise, whatever the reason may be for such refusal, does not constitute a penalty.

The particular clause of the statute assailed in this case not only requires proof of unprofessional or dishonorable conduct, but it must be other grossly unprofessional or dishonorable conduct of a character likely to deceive or defraud the public. It is not unreasonable to conclude that, by the use of the word "other," the Legislature intended that the conduct

referred to should be similar in its nature to that designated in the preceding subdivision of that section and defined as "a crime of the grade of a felony, or one which involves moral turpitude, or procuring or aiding or abetting the procuring of a criminal abortion." Not only that, but such conduct is further qualified by the use of the word "grossly." Furthermore, such conduct must not only be grossly unprofessional or dishonorable, but it must be of a character likely to deceive or defraud the public. It has been held, in construing a similar statute, that the language "unprofessional or dishonorable" was not intended to describe two classes of conduct, and that the word "unprofessional" was used in the same sense as "dishonorable," and not as signifying "unethical." State vs. State Medical Examining Board, 32 Minn., 324.

Nearly if not all the states have statutes requiring applicants for license to practice either medicine or law to present satisfactory evidence of good moral character and this court knows of no case in which it has even been held that such a statute was invalid because of uncertainty. It would seem that statutes of the latter class afford as much room for difference of opinion as does the statute under consideration in this case.

Legal Effects of Neglect to Observe Directions of Physicians

The Supreme Court of Arkansas says that the case of Maryland Casualty Co. vs. Chew (122 S. W. R., 642), as it is now entitled, was brought by the latter party to recover indemnity on a policy of accident insurance. One of the defenses was that the plaintiff did not use due diligence to secure the recovery of his injured arm. It has been held in cases of personal injury that no damages should be allowed the injured party for any impairment of health or physical condition occasioned by his neglect to observe the directions of his physician. On the same principle, no indemnity should be allowed to an insured in actions like this on account of an extension of the injury where such extension is occasioned by his neglect to observe such directions. But the failure of the plaintiff to observe reasonable care in following the advice of his physician could not affect the defendant unless it increased the indemnity and the defendant would have no right to complain.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

February 26

1 *Management of Glycosuria in Elderly Persons. V. C. Vaughan, Ann Arbor.
2 Case of Pellagra. H. Fox, New York.
3 Chronic Joint Diseases. J. M. Taylor, Philadelphia.
4 Visceral Angioneurosis. S. S. Cohen, Philadelphia.
5 Inflammatory and Suppurative Conditions of the Retropharynx of Infants. E. M. Sill, New York.
6 *Osteomyelitis. J. E. Moore, Minneapolis.
7 Bier's Hyperemic Treatment in Surgery. E. Adams, New York.
8 An Hereditary Chart. J. F. Munson, Sonyea, N. Y.
9 Certain Lumbar Punctures at Bloomingdale Hospital. G. S. Amsden, White Plains, New York.

1. **Glycosuria in Elderly Persons.**—The glycosuria of elderly life is due, in many instances at least, to excessive carbohydrate feeding; this excess is usually confined to some special carbohydrates, sugar and wheat starch; the early glycosuric of this class is often easily able to care for other carbohydrate foods; the harmful carbohydrates should be detected and eliminated from the food; those that can be assimilated should be determined and permitted; there is a specificity in the metabolism of carbohydrates as there is in that of proteins; the presence of a small amount (from 0.5 to 2 per cent.) of sugar in the urine should not be regarded as a matter of trivial importance. In many persons the capacity for assimilating carbohydrates is largely determined by the time of day when the food is taken. Glycosurics who cannot metabolize carbohydrates when taken for breakfast, may dispose of one hundred grams of bread taken at a 6 o'clock dinner. Why this is true, Vaughan cannot say, unless it is due to the more hurried way in which many things, both foods and medicines, pass through the body when taken in the morning.

The third point is the value of the open-air treatment of this form of glycosuria. In a general way it is stated by most authorities on diabetes that life in the open air is beneficial, but Vaughan does not think that this has been sufficiently emphasized. He thinks that porch sleeping is quite as beneficial to the glycosuric as to the tuberculous.

6. Abstracted in THE JOURNAL, Feb. 19, 1910, p. 648.

Boston Medical and Surgical Journal

February 24

10 The Mother and the Child in the Tuberculosis Problem. E. O. Otis, Boston.
11 Jaundice in New-Born Infants. J. L. Morse, Boston.
12 *Scarlet Fever Prophylaxis with Streptococcus Vaccine. R. M. Smith, Boston.
13 Alcoholic Cirrhosis of Liver in a Boy of Four Years. D. N. Blakely, Boston.
14 Stray Thoughts on History of Medicine. J. E. Donley, Providence, R. I.
15 Why the "Optometry" Legislation should not Pass. G. S. Derby and R. S. Loring, Boston.

12. **Scarlet Fever Prophylaxis with Streptococcus Vaccine.**—The reasonableness of the use of streptococcus vaccine in scarlet fever would seem to be dependent on the acceptance of the streptococcus as the cause of scarlet fever. The results obtained are believed by many to establish the primary rôle of the streptococcus in scarlet fever. The only cases in which the vaccines are withheld are (1) in patients having a high temperature, and recently, since the conviction that no harm is done has been established even these have received doses without evident untoward results; (2) in very young infants or patients who, from some cause or other, are greatly exhausted; and (3) in those having nephritis. Smith urges that vaccines should be given a wider application in this country to prove or disprove the contentions of the Russian physicians who have used them extensively.

Medical Record, New York

February 26

16 *Modern Views of Heredity: Study of a Frequently Inherited Psychosis. C. L. Dana, New York.
17 Traumatic Affections of the Knee-Joint. R. Hazen, Brentwood, L. I.
18 The Wassermann Reaction. D. E. Hoag, New York.
19 *Tuberculosis with Periodical Hemorrhages from the Bowel. D. I. Macht, Baltimore.
20 *Treatment of Carcinoma with Body Fluids of a Recovered Patient. E. Hodenpyl, New York.
21 Ophthalmic Instrument Case, Sterilizer and Tray Combined. M. Talmey, New York.
22 Letters to a Neurologist (continued). J. Collins, New York.

16. **Modern Views of Heredity.**—Dana says that the teachings of advanced investigators show that in improving and educating poor stock, including defectives and retarded minds, education is of little value and does not affect racial progress. Mendel's law applied to human nature will show that a mixture of races having distinctly different characters produces a hybrid stock which never altogether breeds pure. Mixed races which have opposite character units will not produce a new, pure type unless we segregate the impure and hybrid three-quarters. A helpful indication from Mendel's law is that by the third generation the breed is pure in certain strains. With a family psychosis a pure record of three generations in direct line will remove all liability to the psychosis.

19. **Tuberculosis with Hemorrhages from Bowel.**—Macht asserts that women who have tuberculosis are unfavorably affected by the occurrence of the menstrual period, having fever and pains at that time, with increased cough, and more marked physical signs. They also have vicarious hemorrhages from the lungs. He describes a case in which hemorrhages from the bowels occurred at each menstrual period, which he ascribes to the bleeding of tuberculous ulcerations of the bowel at the time of the menstrual pelvic congestion.

20. **Carcinoma and Body Fluids.**—About 4 years ago, Hodenpyl became interested in a case of carcinoma of the breast in a

woman then 37 years of age. The clinical history and the morphology of the tumor were typical of a rapidly growing malignant cancer. In spite of radical operation, multiple recurrences appeared in the neck and in the primary scar. After the thorough removal of these, secondary growths appeared which were morphologically typical of rapidly growing carcinoma. Still other tumors developed in the neck and breast, which, owing to local complications, and the debilitated condition of the patient, were not removed. Later large tumors developed in the liver, which nearly filled the abdominal cavity followed by the occurrence of excessive chyliform ascites. The prognosis was unqualifiably bad and the patient's death seemed imminent.

But nevertheless, the tumors in the neck and breast gradually dwindled and disappeared. The abdominal tumors gradually grew smaller and became imperceptible, while the liver became smoother and smaller. About four years after the first operation the liver is approximately normal in size and position. With the exception of the scars and decreasing emaciation, and extreme chyliform ascites, requiring frequent tapping, there is now no indication of the original disorder. The ascitic fluid was placed at Hodenpyl's disposal. To test theoretical conceptions, a series of mice, which had developed tumors after implantation of some of the well-known strains of mouse cancer cells, were injected with varying amounts of the ascitic fluid. These injections were made near the tumors, into the tumors, and into the body at large. The effect of these injections was to lead to marked necrosis of the tumors, to a noteworthy diminution in their size, or to their complete disappearance.

After experimental tests of the harmlessness of the fluid, first in animals, then in human beings, injections of the fluid in cases of carcinoma of various types in man were undertaken. These injections have been made in small quantities, near or directly into the tumors, or in large quantities into the veins. The general effects of these injections in man has been nearly uniformly to induce a temporary local redness, tenderness, and swelling about the tumors, which soon subside. Then occur softening and necrosis of the tumor tissue, which is now absorbed or discharged externally, with the subsequent formation of more or less connective tissue. In all cases, the tumors have grown smaller; in some they have disappeared altogether. In no instance has any tissue in the body other than the tumor, shown the least reaction after the injections, nor have any systemic effects been manifest even after large venous infusions. The author promises a full report later.

Lancet-Clinic, Cincinnati

February 19

23 Venereal Diseases: Their Antepartum, Partum and Postpartum Effects. E. J. Kehoe, Cincinnati.
24 Hirschsprung's Disease. E. W. Walker, Cincinnati.
25 X-Ray Study of 25 Cases of Aortic Aneurisms. S. Lange, Cincinnati.

Virginia Medical Semi-Monthly, Richmond

February 11

26 Actinomycosis: Two Cases from Virginia. H. B. Stone, University.
27 A Bureau of Health. J. G. B. Bulloch, Washington, D. C.
28 Infantile Hypertrophic Pyloric Stenosis. M. Newton, Richmond.
29 Enlarged Prostate—Two Specimens Removed Suprapubically. G. S. Peterkin, Seattle, Wash.
30 Hygiene and Prophylaxis of Typhoid. R. Mason, The Plains.
31 Technic and Treatment of Certain Dermal Diseases and Deformities with Carbon Dioxid. C. A. Simpson, Washington, D. C.
32 Pathology and Treatment of Typhoid. Z. V. Sherrill, Marion.
33 Early Diagnosis and Treatment of Pulmonary Tuberculosis. W. D. Tewksbury, Catawba.

Journal of the Minnesota State Medical Association and Northwestern Lancet, Minneapolis

February 15

34 Excision of the Head of the Radius. A. E. Wilcox, Minneapolis.
35 Diagnosis and Pasteur Preventive Treatment of Rabies. O. McDaniel, Minneapolis.
36 Rabies. C. E. Cotton, Minneapolis.

Kentucky Medical Journal, Bowling Green

February 1

37 The State Journal and the State Medical Society. J. M. Peck, Arlington.
38 *What more can our Profession do to Decrease the Spread of Tuberculosis? J. Glahn, Owensboro.
39 *Diagnosis of Incipient Tuberculosis. O. W. Rash, Owensboro.
40 *Dangers of Animal Tuberculosis to the Public Health. F. T. Eisenman, Louisville.
41 Perineorrhaphy. L. Bloch, Louisville.
42 *Management of Burns. C. G. Garr, Lexington.
43 *Diagnosis, Prognosis, Pathology and Treatment of Compound Fractures. J. G. Carpenter, Stanford.
44 Treatment of Compound Fractures. W. L. Mosby, Bardwell.

38, 39, 40, 42, 43. Abstracted in THE JOURNAL, Nov. 27, 1909, pp. 1854, 1855.

Archives of Internal Medicine, Chicago

February

45 *Effect of Digitalis on the Ventricular Rate in Man. A. W. Hewlett, Ann Arbor, Mich., and T. B. Barringer, New York.
46 Emphysematous Gangrene Due to a Member of the Colon Group. R. G. Owen, Iowa City, Iowa.
47 Experimental Study of the Antitryptic Activity of Human Serum. R. Weil, New York.
48 *Cases of Low Temperature. J. F. Munson, Sonyea, N. Y.
49 Problems of Experimental Nephritis. R. M. Pearce, New York.
50 The Presphygmic Period of the Heart. G. C. Robinson and G. Draper, Philadelphia.

45. **Effect of Digitalis on Ventricular Rate in Man.**—Of the various cardiac irregularities produced experimentally by digitalis, the earliest to appear in most instances is an occasional omission of ventricular contractions, owing to an interruption of the stimulus between the auricles and ventricles. Somewhat later, or even immediately after this, the heart may assume a most peculiar rhythm in which the auricles and ventricles are beating quite independently of each other. This irregularity differs from the ordinary rhythm of complete heart-block in that the ventricular rate is not slow, but approaches and usually exceeds the auricular rate; so that, for example, one may count 16 ventricular to 15 auricular contractions. This rhythm is common in carefully graded digitalis poisoning in dogs, but this form of irregularity has never been described in man.

Hewlett and Barringer report such a case. The heart was distinctly enlarged. There was a soft systolic murmur at the apex transmitted to the axilla and back. The second pulmonic sound was accentuated. The pulse was weak, of small volume, and occasionally irregular. The man had a slight but continuous fever and showed a mild anemia. Blood cultures were negative. The venous tracings taken one day before the patient died were remarkable in that they showed a regularly recurring cycle of changes. Each cycle required about seven seconds for its completion, and included about 14 ventricular contractions. At certain portions of the cycle, a single, sharp, positive wave occurred in the jugular pulse just after the onset of ventricular systole. Midway between these groups of sharp waves, each ventricular systole was represented on the venous pulse by two waves of almost equal height connected by a more or less distinct plateau. The authors regard it as evident from the duration of these cycles (seven seconds) that they were independent of the respiration, for the respiratory rate was constantly about 30 a minute.

On inquiry it was found that the patient had been taking drugs of the digitalis series in considerable quantities over a long period of time. During all this time his heart failure was gradually becoming worse. Although the daily amount of digitalis and its allies did not seem excessive, nevertheless in view of the fact that the type of arrhythmia corresponded to that seen in experimental digitalis poisoning, it seems probable to the authors that the irregularity was due to a cumulative action of the drug. If this be true, it illustrates how difficult it may be to ascertain when enough digitalis has been given, for at no time was marked slowing of the pulse observed. This peculiar irregularity is believed by them to be due to the action of the digitalis in increasing the spontaneous ventricular rate.

48. **Low Temperature.**—Munson reports 18 cases in which the temperature ranged below 92 F.; in some instances falling as low as 73, 76, 78 and 79 F. He says that the possibility of any error was eliminated entirely. The majority of the patients were of low mental grade, and some infectious condition was present in almost all. Pneumonia, tuberculosis, erysipelas and pyelonephritis were among those noted, together with acute abdominal conditions. Chronic conditions lowering

the vitality of the patient were often present. The low temperature was usually agonal or preagonal.

Ophthalmology, Seattle, Wash

January

51 Heterophoria and Heterothropia in Duction and Version. E. Lauder, Cleveland.
52 Size and Position of the Angle Alpha by a Simple Modification of the Javal-Schiötz Ophthalmometer. L. Howe, Buffalo.
53 Mixed Astigmatism with Meridians of Astigmatism not Crossing at Right Angles. W. L. Pannell, New York.
54 A Pocket Ophthalmoscope. J. H. Claiborne, New York.
55 A New Skiascope. C. T. Cooke, Seattle.
56 Temporary Monocular Amblyopia Possibly Due to Embolus in the Optic Nerve. H. F. Hansell, Philadelphia.
57 Sympathetic Ophthalmitis. D. Roy, Atlanta, Ga.
58 Visible Movement of Blood in Retinal Vessels. C. S. G. Nagel, San Francisco.
59 Massage as an Occupation for the Blind. L. W. Fox, Philadelphia.
60 Conjunctival and other Reaction Tests to Tuberculin in Tuberculosis of the Eyeball and its Adnexa. C. A. Oliver, Philadelphia.
61 Tuberculin Treatment of the Eye. Dr. Junius, Cologne, Germany.
62 Injury to the Eye from the Presence of Anilin Pencil in the Conjunctival Cul-de-Sac. A. C. Snell, Rochester, N. Y.
63 Transfixion of Cornea by Hatpin Without Injury to Lens. A. G. Bennett, Buffalo.
64 Increased Intraocular Tension in Cases of Epidemic Dropsy. F. P. Maynard, Calcutta, India.

Journal of the Indiana State Medical Association, Fort Wayne

January

65 *Facts Concerning Diphtheria Revealed by Laboratory Examinations. J. P. Simonds, Indianapolis.
66 *Umbilical Hernia Containing all the Abdominal Viscera. J. R. Eastman, Indianapolis.
67 Sketches of the Medical History of Indiana (continued). G. W. H. Kemper, Muncie.
68 Chronic Non-Tuberculous Arthritis. J. V. Reed, Indianapolis.
69 Tumors of the Tongue. L. D. Brose, Evansville.
70 Cesarean Section as a Means of Rapid Delivery in Eclampsia. W. Schell, Terre Haute.

65. **Diphtheria.**—Since diphtheria is vastly more prevalent during the school months, and since school children, who so frequently have chronically diseased throats, may easily become diphtheria bacillus-carriers, Simonds urges systematic school inspection with subsequent proper treatment of pathologic throat conditions. The fact that a large number of cases diagnosed "not diphtheria" clinically prove positive on bacteriologic examination, and *vice versa*, demonstrates the importance of taking cultures from every sore throat, regardless of the age of the patient or the severity of the symptoms. It is likewise important in combating the spread of this disease to take cultures from the throats of every person who has come in contact with a case of diphtheria. All persons whose throat cultures contain diphtheria bacilli, whether suffering from any symptoms of the disease or not, should be placed in quarantine and kept there until at least one culture or, better, two consecutive cultures, show that these bacilli have disappeared. The administration of antitoxin has little or nothing to do with the disappearance of diphtheria bacilli from the throat. Simonds believes that an arbitrary time limit of quarantine in diphtheria is not justifiable. Release from quarantine should be governed entirely by the results of bacteriologic examination of subsequent cultures from the throat of the patient.

66. **Umbilical Hernia Containing all the Abdominal Viscera.**—The sac in Eastman's case had but one coat—a peritoneal coat—which, though somewhat thickened, was quite transparent, making it possible to determine with considerable precision the contents from without. Two days after the birth of the infant, a fruitless attempt was made to return the contents of the sac to the abdominal cavity. It was found that the extruding organs were for the most part firmly adherent to each other and replacement was impossible. The abdominal cavity was very much smaller than the sac. The extrusion having taken place, no doubt, two or three months before birth, the abdominal cavity therefore failed to develop to its normal relative capacity. An autopsy was not permitted. In the sac were the liver, gall-bladder, spleen, pancreas, stomach, most of the large and small intestines, and the bladder. The child was a female. The extruding sac was round and measured approximately 17.5 centimeters in diameter. The child died on the fifth day.

Maryland Medical Journal, Baltimore

February

71 Value of the Proctoscope. J. D. Reeder, Baltimore.
72 Acute Alcoholic Poisoning in Children. E. Anderson, Rockville, Md.
73 Stahl, Hoffman, Boerhaave, Haller, Cullen and Brown. H. M. Cohen, Baltimore.
74 *Septic Heart Pause. A. K. Bond, Baltimore.

74. **Septic Heart Pause.**—Bond's patient has not a slow heart; he has a definite heart-pause of about 15 seconds, with beats at normal intervals when they did occur. He has for many years had an old aortic stenotic murmur of unknown origin, which ordinarily produces no disease distress whatever. The patient is married and has children. He has never contracted venereal diseases; he uses neither alcohol, coffee nor tobacco.

The first time Bond saw him was in May, 1906, during convalescence from an alarming attack of heart disturbance, following overstrain. It came on suddenly during great muscular exertion, following a heavy meal. His family physician said that the patient's pulse had been down to the neighborhood of 27 beats a minute, with intermissions sometimes of 10 seconds, and thought he had rescued him from death by the use of heart stimulants. The bowels had moved well under purges. The patient was eating, digesting, and sleeping well. There was flatulence; the urine showed no albumin. The apex beat at that time was normal, with no sign of hypertrophy or dilatation; a soft but distinct systolic murmur was heard all down the sternum and up the length of the carotids, with about equal intensity; all the valves closed normally. Several attacks had occurred in recent years, always after exertion on a full meal, during one of which Osler saw him and was said to have considered it acute heart-strain on a chronic valve lesion. After each of these attacks the man came back into full health. Bond believes that these attacks were due to intestinal sepsis.

Bulletin Johns Hopkins Hospital, Baltimore

February

75 *Cases of Purpura Hemorrhagica Due to Benzol Poisoning. L. Selling, Baltimore.
76 *Anerythremic Erythremia (?). R. S. Morris, Baltimore.
77 Excretion of Creatinin in the Infant: Its Occurrence in Amniotic Fluid. S. Amberg and L. G. Rowntree, Baltimore.
78 *Method of Splinting Skin Grafts. J. S. Davis, Baltimore.
79 *Practical Method of Imitating the Normal and Abnormal Heart Sounds for Teaching. C. W. Larned, Baltimore.

75. **Purpura Hemorrhagica Due to Benzol Poisoning.**—The three cases reported by Selling occurred at a factory for the manufacture of tin cans, in the suburbs of Baltimore, and were confined to one department, the so-called "coating room." The only essential difference in the processes as carried on here and in the rest of the factory consisted in the use of a substitute for solder; a mixture composed of pure rubber, a rosin, and a coloring matter, dissolved in commercial benzol. Twenty-three people were employed in the coating room: 5 men as machinists, 4 girls as inspectors, and 14 girls between the ages of 14 and 16 at the coating machines themselves. It is among these last that most of the cases, and all of the serious ones, occurred. Ten gallons of benzol a day were used and allowed to evaporate in this room. In spite of the wide-open windows and excellent ventilation—the cases occurred in summer—the space immediately about the coating machines was pervaded by a well-marked odor of benzol, while the same odor, much weaker, was noticeable throughout the room. Two of the patients died. An examination of the other employees working in the coating room was undertaken, and 4 were found, 2 men and 2 girls, who showed a few purpuric spots. They were entirely free from symptoms, their blood showed a slight grade of anemia and a leucocyte count varying from 3900 to 5200 per cmm., that is, either subnormal or on the lower limits of normal.

76. **Anerythremic Erythremia.**—During the last two years Morris has had under observation two patients whose histories were somewhat similar, and further similarity was strikingly present in their physical conditions. Without a blood count, the diagnosis of erythremia was immediately suggested. But this could not be definitely established. In neither case could a history of malaria or syphilis be obtained to account for a splenic tumor; a splenic anemia did not exist, nor was there

any evidence of amyloid disease. The blood examination excluded leucemia, and there were no grounds on which to base a diagnosis of Hodgkins disease. There was no valvular disease of the heart, and no pulmonary emphysema to account for the cyanosis present. Sulph-hemoglobinemia and methemoglobinemia were thought of as possible explanations of the cyanosis. The latter is not uncommon in these cases, but differs in that it resembles more the ashen hue of argyria, as contrasted with the plethoric cyanosis of erythremia. Splenic tumor was found in both patients. Furthermore, repeated spectroscopic examination in the other revealed only the bands of oxyhemoglobin, even in concentrated solution, thus excluding sulph-hemoglobinemia and methemoglobinemia. With a negative tuberculin test in Case 1, confirming the physical findings, it is reasonably certain that an active tuberculous process is not the base of the patient's condition. Morris says that were it not for the normal blood counts, both of the cases reported above would be characteristic examples of erythremia.

78. **Splinting Skin Grafts.**—There are many partial "takes" and failures for the reason that grafts are not properly splinted after they are applied, and in consequence slip down with the dressings, or are floated off by blood or serum collecting beneath them. In order to overcome this difficulty it is necessary to reinforce the grafts with some material which has enough body to act as a splint, and at the same time is not too rigid to shape itself readily to any desired location. It is also very important that it should not adhere to the grafts and granulations, or cause too much pressure, and that there be free escape of any secretions into the dressings.

After experimenting with various materials, Davis tried a coarse, meshed net, such as is used for curtains. It is made of loosely woven flat bars of cotton thread, surrounding openings about 1 cm. in diameter. It is necessary to have the openings approximately this size as smaller ones often become clogged. This proved too flimsy, and also became adherent to the grafts. So in order to increase the body of the fabric, after washing out the sizing and drying, he soaked the material in a rubber solution made up of pure gutta-percha, from 15 to 30 parts (depending on the stiffness of material required), and chloroform 150 parts and found that after the chloroform had evaporated and the material was dry there was enough stiffness to give a very satisfactory splinting material. When prepared the net should be of a slight grayish-brown color throughout.

The sterilization before application is as follows: Cut in pieces as large as may be desired and separate them with one or two thicknesses of gauze. Place in a sterile jar, and fill it with 1 to 1,000 bichlorid of mercury solution. Change this solution three times with twelve-hour intervals, and finally allow the mesh to remain permanently in 1 to 1,000 bichlorid solution. It can be kept for a considerable time in this way, although it is better to make up small quantities and often. The dry permeated material will keep indefinitely. No hot solution must come in contact with the mesh during the sterilization or application. After the grafts are in place the mesh is taken out of the bichlorid solution and thoroughly rinsed with salt solution, then dried with a sterile towel. A piece is cut large enough to allow a margin around the grafted area of from 5 to 10 cm. Then the material is applied and pressed snugly down on the grafted area and surrounding skin or granulations. Should the conformation of the part or wound not permit the mesh to be evenly applied, a few cuts with scissors will allow an infolding and accurate fitting, which is necessary in order that the splinting may be successful. The overlapping edges may be secured to the skin by strips of adhesive plaster when necessary. After the net is in position the dressing selected is applied, and the whole secured by a bandage. When the overlapping material rests on granulation tissue, it will be found that it can be lifted up at any time without causing pain or bleeding, as the granulations do not adhere to or grow into the parts of the impregnated material. With this mesh in place the grafts can be observed from time to time with little or no danger of displacing them.

79. **Imitating Heart Sounds.**—Four methods are described by Larned of producing outside the body tones which, when conveyed to the ear, represent with a reasonable degree of exactness, at least in force and rhythm, the sounds heard through the stethoscope placed on the patient's chest. In all instances the sounds are produced by taps, strokes, and what Larned terms tap-strokes and stroke-taps, on the conductor employed.

Method 1.—The left forearm is used as a conductor, the left hand being closely applied over the left ear, the taps and strokes being made on the elbow. Method 2.—This is the same, except that the taps and strokes are made not on the elbow but on the dorsum of the hand. Method 3.—The stethoscope is used as the conductor, the palm of the left hand being placed over the bell and the taps and strokes made on the dorsum of the hand. Method 4.—The stethoscope is used as the conductor and is applied to the right side of the bared chest, the taps and strikes being made on the chest at a distance of some 2 to 4 inches from the bell. Distant and faint sounds by tapping over the ribs.

By "taps" is meant the gentle drawing of the tip of the finger over the dorsum of the ear hand, a short stroke for short murmurs, a long stroke for long murmurs, the intensity of the murmur being indicated by the force of the stroke. By tap-stroke is meant the direct merging of a tap into a stroke without any interval of time. It is made by ending the tap with a stroke before lifting the finger. By stroke-tap is meant the direct merging of a stroke into a tap without any interval of time. This can only be done by the use of two fingers, the tap occurring simultaneously with the elevation of the stroking finger.

The normal heart sounds as heard at the apex: A light but rather long tap is made for the first sound followed by a lighter and shorter tap for the second sound, care being taken to observe the proper interval between the first and second sound, and the second and first sound. Mitral insufficiency as heard at the apex—the murmur following and not replacing the first sound: A tap-stroke is made with the index finger to indicate the first sound and murmur followed by a light tap with the middle finger to indicate the normal second sound. Aortic insufficiency as heard at the base, the murmur replacing the second sound: A light tap is made with the index finger to indicate the first sound, followed by a stroke with the middle finger to indicate the diastolic murmur:

(1) Mitral stenosis; (2) mitral stenosis and insufficiency; (3) mitral stenosis and insufficiency and aortic insufficiency, all as heard at the mitral area: (1) A rapid succession of four crescendo taps is made beginning with the little finger and ending with the index finger, the last tap being sufficiently strong to indicate the shock of the first sound and immediately followed by a light tap to indicate the second sound. (2) To bring out a systolic associated with the presystolic murmur the culminating tap is converted to the presystolic rumble by a culminating tap-stroke, the stroke being lateral toward the little finger, light and short. (3) To bring out a diastolic murmur associated with the presystolic, or the presystolic and systolic make, instead of the tap which represents the second sound, a short gentle stroke, provided the murmur replaces the second sound, otherwise a tap-stroke is made, in either instance being lateral, toward the thumb. These two lateral strokes, one for the systolic, the other for the diastolic murmur, are best produced by a rocking motion at the wrist, first to the ulnar then to the radial side.

Aortic stenosis as heard at the base: A firm long scratching stroke is made with the nail of the index finger to indicate the harsh systolic murmur, followed by a very gentle tap with the middle finger to indicate the relatively faint second sound.

The pistol-shot sound heard over the arteries of the extremities in aortic insufficiency can be well imitated by a sharp tap over the knuckle of the metacarpophalangeal joint of the middle or index finger. Gallop rhythm, pendulum rhythm, reduplications, splitting of the first and second sounds, and a variety of other conditions can all be well imitated.

Journal Delaware State Medical Society, Wilmington

February

80 General Principles Underlying Modern Therapeutics. A. Robin, Wilmington.

Surgery, Gynecology and Obstetrics, Chicago

February

81 *Chronic Osteomyelitis. Diagnosis and Treatment. C. Beck, Chicago.
82 The Vesiculæ Seminales. C. E. Barnett, Fort Wayne, Ind.
83 *Use of Oil in Abdominal Surgery. D. P. D. Wilkie, Edinburgh, Scotland.
84 Floating Head and Elective Abdominal Delivery. D. Longaker, Philadelphia.
85 Intussusception in Children. J. M. Elder, Montreal.
86 *Premature Detachment of Normally Situated Placenta. M. T. Goldstine, Chicago.
87 Actinomycosis of the Uterine Appendages. C. Wagner, Chicago.
88 Subcutaneous Perforation of the Intestine. F. A. Palmer, Morris, Ill.
89 Pelvic Transplantation Metastasis as a Means of Recognition of Hopeless Abdominal Carcinoma. D. W. Palmer, Cincinnati.
90 Congenital Diverticula of Bladder. H. Fischer, New York.
91 Postural Treatment and Lavage of the Renal Pelvis for Relief of Pyelitis of Pregnancy. P. M. Pilcher, Brooklyn.
92 Harris Dressing for Fracture of the Clavicle. W. Hessert, Chicago.
93 *New Method of Performing Operations on the Skull. W. H. Hudson, Atlanta, Ga.
94 Figure Eight Purse String in Appendectomy. F. B. Walker, Detroit.
95 Flexion of the Pelvis in the Trendelenburg Position. E. Rixford, San Francisco.
96 Saline Proctoclysis Apparatus. P. B. Magnuson, Chicago.
97 Anesthesia in Obstetric Practice. H. M. Stowe, Chicago.

81. Chronic Osteomyelitis.—The main object of Beck's paper is to show the necessity of correct diagnosis by systematic *x*-ray examination, and the absolute necessity of radical operation, if we want to obtain results. Diagnosis without radical operation will never result in a cure. Radical operation, on the other hand, without a correct diagnosis, will do more harm than good. For instance, if a surgeon removes three-quarters of the femur, it is radical enough. Also, if a surgeon removes the whole jaw and nine-tenths of it is normal, it is radical enough; but if he does not put in a prothesis or does not prevent the periosteum from shrinking, the case will be very disastrous. Correct diagnosis and radical operation must go together.

83. Use of Oil in Abdominal Surgery.—Relative to the use of sterile petrolatum oil in abdominal surgery to prevent or to limit the formation of adhesions, Wilkie carried out 6 experiments on cats and rabbits. The procedure was as follows: The animal's abdomen was opened with septic precaution, the surface of the small intestine over about 16 inches of its length was scrubbed with dry gauze and scraped with a knife till bleeding points appeared. Six weeks or two months later the abdomens of the 12 animals so treated were reopened and in all adhesions were present, though they were never very extensive. These adhesions were broken down, leaving raw surfaces. In 6 of the animals, oil was then smeared over the rawed surfaces and the abdomen closed. In the control animals the adhesions were broken down, but no oil used. The animals were opened again 4 weeks later, and it was found that in those in which oil had been used, the adhesions were very much fewer and less dense than in the controls. At the end of a month all trace of oil had disappeared from the peritoneal cavity. Wilkie found 15 days to be the longest time for oil to remain in macroscopic quantity in the peritoneal cavity in aseptic cases. He concludes, therefore, that sterile oil may be advantageously used for mopping over denuded surfaces in operations for peritoneal adhesions.

86. Detachment of Normally Situated Placenta.—Rupture of the membranes and leaving delivery to Nature are, in Goldstine's opinion, only justifiable when the uterus is contracting vigorously and the os is fully dilated. He says that rupture of the membranes and rapid delivery should not be done until the uterus is contracting rhythmically, the patient rallied, and the os undergone some degree of dilatation. The tampon and binder should be used when there are no contractions of the uterus, no dilatation and when the patients are in a collapsed state, and its use continued until such time as the patient and uterus have recovered. An external hemorrhage is converted into a concealed hemorrhage by the use of the tampon. If the uterine walls are incapable, directly or indirectly, of withstanding a pressure within them equal to the maternal blood pressure, and should they be distended as the result of increased intrauterine pressure, the tampon and binder will, if applied properly, render them capable of holding the pressure of the blood and so control the hemorrhage.

93. New Method of Performing Operations on the Skull.—The peculiarity of the instruments devised by Hudson is that they will cut as long as they need to, but will cease cutting, and cannot be further rotated, when the layer of bone in front of them becomes so thin as to give way before their advances. In other words, so long as there is resistance in the bottom of the opening they will cut; when this resistance ceases, they will not move further. Large drills, trephines and burrs have been made on this principle.

Journal of Nervous and Mental Disease, Lancaster, Pa.

February

98 Pure Word Deafness with Autopsy. A. M. Barrett, Ann Arbor, Mich.
99 *Reflexes in Hysteria. P. C. Knapp, Boston.
100 Periosteal Cyst Formation: Unusual Effect of Intracranial Pressure. E. W. Taylor, Boston.

99. Abstracted in THE JOURNAL, July 31, 1909, p. 403.

Colorado Medicine, Denver

January

101 Artificial Lymphocytosis as a Possible Aid in the Treatment of Tuberculosis. G. B. Webb, W. W. Williams and A. F. Basinger, Denver.
102 Psychotherapy in Postoperative Conditions. E. J. A. Rogers, Denver.
103 Chemical Corporeal Correlations as Applied to Practical Medicine. E. C. Hill, Denver.
104 *Removal of Skin from the Abdomen During Laparotomy as a Source of Material for Grafting. F. G. Connell, Oshkosh, Wis.

104. Material for Grafting.—A recent case in which an extensive granulating surface of the face and scalp was covered with Thiersch grafts, cut from a redundant piece of abdominal skin, that was discarded during the course of an operation for ventral hernia, subsequently rescued and kept in normal salt solution until it could be used, leads Connell to suggest that suitable skin for grafting purposes might easily be obtained during the course of the majority of laparotomies. A longitudinal strip of skin and superficial fascia, in length equal to the abdominal incision, and in width from one-half to one inch, depending on the amount of subcutaneous fat and the redundancy of the skin, might, he says, be removed from either edge of the wound and cause no interference with the abdominal union, nor of the convalescence or convenience of the donor. This strip of tissue from which the skin is to be cut may be removed at the outset of the operation and handed to an assistant who may do the grafting. Or the tissue may remain in place until the operation is completed, all but the suturing of the skin and superficial fascia, it may be kept in hot normal salt solution until the closure is completed, or better, the final suturing may be done by an assistant while the transplanting is carried out at once.

New Orleans Medical and Surgical Journal

February

105 Reciprocity with the Louisiana State Board of Medical Examiners. Its Present Status. F. A. Larue, New Orleans.
106 Pathologic Facts about Malaria. O. L. Pothier, New Orleans.
107 Hydrotherapy. T. S. Dabney, New Orleans.
108 Early History of Anesthesia. C. W. Allen, New Orleans.
109 Pellagra Contracted from Domestic Animals. J. B. Rushing, Benson, La.
110 Extirpation of Varicose Veins. E. D. Friedrichs, New Orleans.
111 Iliofemoral Aneurism. Treated by Endoaneurismorrhaphy (Matas). H. B. Gessner, New Orleans.
112 Tuberculous Hip-Joint Disease. L. Sexton, New Orleans.
113 Indications for Exploratory Laparotomy. M. Souchon, New Orleans.
114 Epilepsy. P. E. Archinard, New Orleans.
115 Anterior Poliomyelitis (Infantile Paralysis). L. L. Cazenavette, New Orleans.
116 Modern Conceptions of Hysteria. R. M. Van Wart, New Orleans.
117 Surgical Parotitis in the New-Born Infant. J. Smyth, New Orleans.
118 Modern Treatment of Paralysis of Childhood. E. D. Fenner, New Orleans.

Journal of Medical Research, Boston

February

119 *The Normal and Pathologic Histology of the Thymus. A. M. Pappenheimer, New York.
120 Immunity Production in Rabbits by Inoculation of Increasing Numbers of Living Virulent Bovine Tubercle Bacilli. C. W. Lieb, Colorado Springs, Colo.
121 The Pathologic Changes which Develop in the Kidney as a Result of Occlusion, by Ligature, of One Branch of the Renal Artery. W. DeB. MacNider, Cleveland.
122 *The Relationship of Amboceptors in Complement Fixation and in Bacteriolysis. J. C. Torrey, New York.

123 *The Occurrence of Lipase in Human Tissues and its Variation in Disease. M. C. Winternitz and C. R. Meloy, Baltimore.
124 *Antiperistalsis in its Relation to Tubercle Bacilli and Other Bacteria in the Alimentary Tract. A. E. Hess, New York.
125 Carcinoma of the Breast in a Male. G. McConnell, St. Louis.
126 Aciduric (Acidophilic) Bacteria. A. Kendall, Boston.
127 *The Clinical Diagnosis of General Paralysis of the Insane. E. F. McCampbell and G. A. Rowland, Columbus, Ohio.

119. **Thymus.**—Pappenheimer reaches the conclusion that the thymus is an epithelial organ containing two types of epithelial cells, one the reticular epithelium serving as a supporting structure, and the other the well-known small thymic cells, which are not lymphocytes. Hassall bodies are formed from the reticular cells. The thymus consequently bears no relation to lymph glands. It is in a state of evolution until puberty, when regressive changes take place, at first abruptly, later more gradually. It is, however, probably a functional organ throughout life. Status lymphaticus is not associated with any definite structural features in the thymus, except that normal involution is delayed in persons manifesting the lymphatic state.

122. **Antigonococcus Serum.**—Torrey states that an antigonococcus serum may contain substances on which the fixation of complement depends, and yet be devoid of anticidal antibody. This condition may be reversed. Hence it is necessary to conclude that bacteriolysis and fixation of complement do not depend on the same antibody.

123. **Lipase in Human Tissues and Disease.**—Winternitz and Meloy find that there is no decrease in the lipolytic activity in old age; that its activity in various tissues is very low at birth, but increases rapidly during the first few days of life. In the toxemia of pregnancy and diabetes mellitus the lipolytic activity was found to have declined in all the tissues examined. Chronic passive congestion with atrophy of the liver cells causes a fall in the lipolytic action of the liver. This action was also diminished in livers showing fatty changes and cloudy swellings, as well as in four cases of cirrhosis. In acute and chronic nephritis the lipolytic activity of the kidneys as a rule is decreased, but the decrease is not proportional to the involvement of the kidneys. In general tuberculosis with anemia, the kidney as well as the liver, lung and blood suffer loss in lipolytic action.

124. **Antiperistalsis in Relation to Dissemination of Tubercle Bacilli.**—Hess finds that when bacteria are injected into the rectum the antiperistaltic wave does not as a rule carry them below the ileocecal valve. The conclusion that bacteria so injected rapidly ascend along the intestinal wall into the stomach, esophagus and pharynx, then passing into the respiratory tract, is a mistake, the bacteria being disseminated not by the alimentary tract, but by the blood. Tubercle bacilli, as well as *Bacillus prodigiosus*, pass through the intestinal wall, entering the lymphatic system, and are then distributed by the blood. The reason that previous workers failed to find tubercle bacilli in the blood after rectal injection is because they did not employ sufficient quantities of blood for cultures and inoculations.

127. **The Diagnosis of General Paralysis of the Insane.**—The authors find that 97.8 per cent. of cases diagnosed as general paralysis give a positive Wassermann reaction with the blood and 89.1 per cent. of such cases give a positive reaction with the cerebrospinal fluid. The Noguchi globulin test was obtained with the cerebrospinal fluid in 95.6 per cent. of all cases, and the Ross-Jones globulin test in 93.4 per cent. In 95.6 per cent. of the cases there was found a lymphocytosis of the cerebrospinal fluid.

Northwest Medicine, Seattle

February

128 Theories of Anaphylaxis. E. E. Heg, Seattle.
129 The Sigmoid Colon. W. D. Kirkpatrick, Bellingham, Wash.
130 How Shall We Treat Late Carcinoma of the Uterine Cervix? J. W. Bean, Tacoma.
131 Meningitis Serosa. R. S. Stearns, Portland.
132 Is Operation Advisable in Fractures of the Skull? O. B. Wight, Portland, Ore.
133 Nystagmus in Relation to the Physiology and Pathology of the Internal Ear. R. L. Nourse, Boise, Ida.
134 **Suppurative Otitis Media in Children.** H. V. Würdemann, Seattle.
135 Rare Cases of Herniotomy. C. N. Suttner, Walla Walla, Wash.
136 Quarantine. W. Johnston, Spokane.

American Journal of Surgery, New York

February

137 General Rachianesthesia. T. Jonnesco, Budapest, Hungary.
138 Subdural Hemorrhage of Traumatic Origin. T. A. McGraw, Detroit.
139 Perforation in Typhoid. H. B. Delatour, Brooklyn.
140 Anesthesia for Intracranial Surgery. F. H. McMechan, Cincinnati.
141 *Technical Points that Furnish the Best Curative Functional and Cosmetic Results in Mastoid Operations for Extradural Lesions. W. S. Bryant, New York.
142 Venous Stasis as a Therapeutic Measure. A. Bonner, New York.
143 Early Diagnosis and Removal of the Cancerous Uterus. C. W. Strobell, Rutland.
144 *Automatic Device for Prolonged Intermittent Flushing. A. J. Bendick, New York City.

141. **Mastoid Operation.**—Strict attention to the following points has given Bryant the best cosmetic, functional and curative results in mastoid operations: (1) The employment of rigid aseptic technic; (2) the immediate closure of the external wound with a minimum of drainage; (3) in a simple mastoid operation, the non-interference with the tympanic contents; (4) the healing of the tympanum before the postaural opening is finally allowed to close; (5) the daily use of Politzerization, beginning three or four days after the operation; (6) the performance of a radical operation only in cases which demand it; and the modification of the technic of a radical procedure so that all the living tympanic structures may be conserved; (7) the preservation of the Eustachian tube intact and patent, throughout; (8) leaving the cochlea intact, except in cases where there are definite indications of an invasion of the cochlea by suppuration.

Texas State Journal of Medicine, Fort Worth

February

145 Menorrhagia Requiring Hysterectomy. W. Keiller, Galveston.
146 Two Cases of Extrauterine Pregnancy. J. E. Gilcreest, Gainesville.
147 Modern Forceps Delivery. G. V. Morton, Fort Worth.
148 *Unusual Depth of Uterine Cavity. J. G. Jones, Smithville, Tex.
149 *Peculiar Mental Phenomena. F. U. Painter, Pilot Point.
150 Importance of Early and Complete Operation in Infectious and Hemorrhagic Conditions of the Abdomen. J. M. Inge, Denton.

148. **Depth of Uterine Cavity.**—The vertical measurement of the uterine cavity in a case cited by Jones was found to be something over 14 inches; the distance from the os to the orifice of either Fallopian tube was from 16 to 17 inches; passing the end along the fundus from one cornea to the other showed a distance of 7 or 8 inches. After 50 days had elapsed since the woman's accouchement the dimensions of the uterine cavity were nearly as great as those of the gravid uterus at full term, as given by the leading authorities.

149. **Peculiar Mental Phenomena in Hemicrania.**—A male, aged 42, had suffered from boyhood with hemicrania. His attacks usually follow overindulgence at table during a period of constipation more obstinate than usual. The attacks prostrate him for several hours, during which time he suffers the most intense head pain and nausea, photophobia, lachrymation and feeling of numbness over the whole area of the distribution of the fifth nerve opposite the side affected by pain. He remains in this condition for a variable number of hours when the skin, hitherto cool and pale, will begin to glow with a pleasant warmth and become covered with perspiration, at which time he will void a large quantity of urine, fall asleep and awaken feeling well. This is his typical attack.

Occasionally he will have as premonitions of an attack, a dull frontal pain. By taking large doses of salines and missing a meal he will perhaps miss the pain and nausea, but have in their stead a peculiar mental condition precipitated by some act of his, or some word or phrase spoken by the one with whom he is conversing, which will bring before him a mental picture of another time and conversation, in which he seems to be both living and talking in the present. He will remain in this dual mental condition for hours, attending to his business, conversing intelligently on any subject introduced, and at the same time feeling that he is living and talking in the past, under circumstances similar to his present environment and conversation. This condition will terminate abruptly with a profuse perspiration or copious discharge of urine, the patient regaining his normal mental state as suddenly as he entered the abnormal.

The second patient, male, 39, has been for years employed as an accountant, having to do with long columns of figures and abstruse calculations. He usually has the typical attack of hemicrania, head pain and nausea, ending in profuse perspiration, or the voiding of a large amount of urine. At other times he has typical attacks ushered in by chilly sensations and slight vertigo without cranial pain or nausea. During such attacks he continues at his desk, but in making his calculations as, for instance, adding a column of figures, he is conscious of the fact that he is adding two columns instead of one—the one before him on paper, the other in his mind, the fictitious column being always fives or multiples of fives. He finishes both columns at the same time, writing the answer to the real problem correctly and equally conscious of the correct solution of the imaginary one. Or, if multiplying will do two problems at the same time, the one real, visual, on paper, the other mental. The mental one always concerns itself with fives or multiples of five, and so on through any and all mathematical calculations. After a variable length of time he will feel pleasantly warm, will void a large amount of urine, when immediately the chimerical problems will vanish and he will at once regain his normal mental state.

Military Surgeon, Washington, D. C.

February

151 Practical Utility of Map Problems in Medico-Military Education. E. L. Munson, U. S. Army.
152 The Possible Relations Between the Army, Navy and Public Health and Marine-Hospital Service, Under the Limitations of Existing Law. G. B. Young, U. S. P. and M.-H. S.
153 *Duties of the Public Health and Marine-Hospital Service. C. P. Wertenbaker, U. S. P. H. and M.-H. S.
154 Mental and Nervous Diseases in the Russo-Japanese War. R. L. Richards, U. S. Army.
155 Presence of Acid-Alcohol-Resisting Bacilli in the Blood. G. B. Foster, U. S. Army.

153. Abstracted in THE JOURNAL, Nov. 27, 1909, p. 1847.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

February 12

1 *Cancer of the Rectum. J. Swain.
2 Cancer of the Cervical Esophagus. H. M. Davies.
3 *Radical Operation for Cancer of the Pylorus. E. W. H. Groves.
4 *Foreign Bodies in the Duodenum. S. Hastings.
5 Existence of Living Creatures in the Stomach as a Cause of Chronic Dyspepsia. W. S. Fenwick.
6 Intussusception of the Transverse Colon in an Adult. L. Wilson.
7 Diverticula of the Gastrointestinal Tract of Congenital or of Obscure Origin. A. Keith.

1. **Cancer of the Rectum.**—Swain advocates excision of the tumor through the abdominal route because it allows of the performance of a more radical operation, therefore greater possibilities for effecting a permanent cure.

3. **Cancer of Pylorus.**—Groves maintains that there is a good prospect of cure in early cases of the disease; that exploratory operations should be performed for diagnostic purposes in all doubtful cases; that a more systematic attempt should be made to remove the whole of the lymphatic area connected with the stomach; that the limits of operability, both for palliative and radical operations, should be defined more rigidly. Bad results he ascribes to the fact that an unreasonable time is usually allowed to elapse before the patient is presented for surgical treatment. In the majority of cases the diagnosis is to be made from the cardinal symptoms of loss of weight, vomiting and pain. In all doubtful cases the patient should be submitted to exploratory operation, unless the body weight rises under medical treatment. Even exploratory operations often leave the diagnosis doubtful. In such circumstances, the patient should be seen at frequent intervals or else treated by excision.

Mortality after resection of cancer of the stomach, according to Groves, is about 50 per cent. This is caused by peritonitis, shock and lung complications. The immediate mortality can be greatly reduced by adopting the two-stage method. The mortality can be further much reduced by excluding cases in which the colon, pancreas, or posterior lymph glands are seriously involved. The adequate removal of the associated lymph areas demands that the great omentum and the tissues in front of the pancreas should be taken away. Remote results of radical operations only give a percentage of 7.6 three year recoveries of those operated on. This low figure, Groves believes, may, in part, be due to the inadequate removal of lymphatic tissues.

4. **Foreign Bodies in Duodenum.**—A girl, aged 3 years, who had been very healthy previously, swallowed a short piece of pencil with a metal extremity, such as is usually attached to a dance program. The next day she began to suffer from sickness, diarrhea and colicky pain. This continued. On the third day after the accident the child appeared to be in no pain. The abdomen was not distended, and moved well with respiration. Slight tenderness was present to the right of the umbilicus. The diarrhea soon ceased. When the child was examined by *x*-rays on the day following, a well-marked shadow, evidently the metal end of the pencil, was seen about 1½ inches from the middle line, beneath the right costal margin. With the child lying on her back, and the *x*-ray tube beneath her, the dark area appeared to descend fully an inch on deep inspiration. Every day the child was examined with *x*-rays, but neither constipating food nor purges made any difference to the position of the shadow. Operation was decided on by Hastings.

An incision 3½ inches long was made above the umbilicus in the middle line. On introducing the hand into the abdomen the pencil was at once felt impacted across the gut just at the bend between the descending and transverse parts of the duodenum. It was easily disimpacted and pushed back into the stomach. An attempt was next made to pass a Brüning's foreign body forceps into the stomach, with which, aided by the hand in the laparotomy wound, it was hoped to seize the foreign body, and remove it by the esophagus. Unfortunately, having no esophagus tube, the attempt was abandoned. A small incision was made through the anterior wall of the stomach on to the foreign body held between the fingers. The pencil at once shot out, and a small wound was closed by a double row of stitches. Through-and-through sutures closed the abdominal incision. The wound healed in a satisfactory manner. The pencil was found to be 1⅞ inches long and 3/16 of an inch in diameter. The point was not sharp.

Lancet, London

February 12

8 Early Diagnosis of Cancer of the Stomach. C. M. Maillin.
9 *Malignant Disease of the Appendix Treated with Emanations of Radium. T. L. Brunton and L. G. Glover.
10 Variability of the Lesions of Poliocncephalomyelitis. K. Bremer.
11 Fatal Case of Acute Anterior Poliomyelitis. J. O. Symes.
12 Chronic Sphenoidal Sinus Disease. W. S. Syme.
13 Malignant and Non-Malignant Tumors of Bilateral Origin. W. R. Williams.
14 Spontaneous Rupture of an Ordinary Ovarian Cyst. R. Jones and W. M. Eccles.
15 The Menopause, Natural and Artificial. A. E. Giles.

9. **Malignant Disease of the Appendix.**—The case described by Brunton and Glover is of interest because, in the first place, the lesion was a primary growth in the appendix; in the second place, the patient survived 8 years from the commencement of his trouble; and in the third place, it was the first case to be treated by a solution of the emanations of radium. Early in February, 1901, the appendix was removed. It was found to have a considerable enlargement of the distal end, the proximal end attached to the cecum being healthy. The whole organ was removed, the tumor at the end being shelled out from the iliac fossa to which it was bound down by adhesions; and this bed from which it came was scraped with a sharp spoon. A gauze plug was inserted down to this spot, and the abdomen was closed. The patient made a good recovery. During the next two years he remained well, but occasionally suffered from pain in the right iliac fossa. This became more persistent in March, 1904. Throughout the summer of 1904 good health was maintained, but in October the tenderness again became more marked.

On the twelfth of that month commenced a severe illness, there being pain in the right iliac fossa and right flank; with rises of temperature at night, and a tumor easily palpable and situated in the right iliac fossa. While it was recognized that a recurrence of the old growth had shown itself, it was also

seen that there was some septic inflammation within or about the tumor. By this time the patient was severely ill, and the tumor was growing rapidly in size, the temperature being continually raised. The abdomen was opened. The growth was found to be hard, nodular and solid, and quite irremovable, and as the patient was very ill and could not stand a prolonged operation, the abdomen was simply closed and nothing further was done. The patient's condition becoming slowly worse, it was decided to try the effects of injections of cinnamate of sodium, and these were given at intervals without any appreciable effect, from January 17 to February 10. The tumor was continuing to increase in size during all this time; and the temperature was hectic in character; further, the skin over the flank became edematous and red, and a mass formed on the right thigh just below Poupart's ligament, which mass was also nodular to the touch. Radium treatment was then begun. One cubic centimeter of water which had absorbed radium emanations was injected into the subcutaneous fat. The patient died eleven months later.

Clinical Journal, London

February 9

16 Subphrenic Abscess. W. H. White.
17 Abdominal Diagnosis. E. Ware.
18 Case of Myasthenia. F. W. Langridge.

Medical Press and Circular, London

February 9

19 New Cardinal Principle in the Treatment of Diseases: Its Application in Disorders of the Nose, Throat, Voice and Speech. R. H. S. Spicer.
20 The Cerebellum and Its Affections. J. S. R. Russell.
21 Hints and Suggestions in the Teaching of Midwifery and Gynecology. F. W. Kidd.

Journal of Tropical Medicine and Hygiene, London

February 1

22 Account of Some Helminths Occurring Among the South African Natives. G. A. Turner.

Dublin Journal of Medical Science

February

23 Medical Education: A Criticism and a Scheme. H. T. Bewley.
24 *Glycosuria and Graves' Disease. H. C. Drury.
25 Treatment of Gastric Ulcer. J. Craig.

24. **Glycosuria and Hypothyroidism.**—Drury reports the following case: A young girl, aged 18, had symptoms of diabetes. She was greatly emaciated. She had noticed herself getting thin for about two months, and latterly had become very weak, but began to suffer from thirst about the middle of August—that is, two and a half months before. She had also missed two menstrual periods. It was evident that she was also suffering from Graves' disease; there was only slight exophthalmos but well-marked retraction of the lids; von Graefe's sign was present in limited extent, being only seen when the visual axis passed below the horizontal line. There was decided bronzing of the eyelids. There was slight tremor of the hands, and the skin was unduly moist, though there was not profuse sweating. The thyroid was moderately enlarged; it pulsated, and a thrill could be felt in it. The heart's action was tumultuous and very rapid, the cardiac impulse being widely diffused; the apex beat violent, but no murmur could be detected. The pulse rate varied from 100 to 140. The areolæ of the breasts were deeply pigmented, but the breasts themselves were small and functionless.

She complained of the throbbing of her heart, and said it troubled her for a long time—several months—before she noticed the thirst or the increased quantity of urine. The amount of urine passed varied from 100 to 177 ounces in the 24 hours. Its specific gravity was 1.042, and at first it gave a slight diacetic acid reaction with perchlorid of iron, but the reaction for acetone itself, though looked for, was not found. The diacetic acid reaction disappeared in a couple of days. The carbohydrate food was considerably limited, but not altogether withdrawn, and the girl was given crude opium in the form of compound soap pill night and morning. There is no improvement; the girl has steadily lost weight, the specific gravity of the urine is always high, 1.040 to 1.050, and acetone was present in the urine on each occasion. The signs of Graves' disease also are more evident, though the heart's action is quieter

Practitioner, London

February

26 *Diagnosis and Treatment of Tuberculosis by Tuberculin. W. C. Wilkinson.
27 *Suppuration in the Knee-Joint: Its Causes and Treatment. A. E. Barker.
28 Milk—Sweet and Sour. C. H. Cattle.
29 Painless Labor. S. Sheill.
30 Use of the Ultra-Microscope for Early Diagnosis of Syphilis. H. W. Bayly.
31 Otosclerosis. D. L. Sewell.
32 Recent Advances in Dermatology. J. M. H. MacLeod.
33 Acidosis in Relation to Anesthesia. F. H. Wallace and E. Gillespie.
34 Treatment of Fracture of Femur After Operation. H. Chapple.
35 Diagnosis of Colic from Inflammatory Conditions in the Peritoneal Cavity. R. M. Walker.
36 Operation for Parotid Fistula. R. D. Mothersole.
37 Treatment of Diabetes. H. E. Smith.

26. **Treatment of Tuberculosis.**—Wilkinson regards the diagnostic use of tuberculin as a safe and valuable procedure. In his experience, he has had no instance in which doses of tuberculin have been followed by any symptoms that would suggest that the tuberculin had set free masses of tubercle bacilli. Tuberculin in proper doses tends to prevent such an accident, as it prevents hemorrhage and tuberculous meningitis by favoring the fibrous organization of a tuberculous formation. Wilkinson also regards tuberculin as invaluable in the early stages of pulmonary tuberculosis when the symptoms are related to other organs—heart and blood vessels and blood, digestive organs, especially the stomach, and even the muscles, nerves, bones and joints—especially symptoms of the rheumatic type. The enormous improvement in the general health gain in weight, and especially gain in energy—and the complete disappearance of the rheumatic pains must, he says, profoundly impress any one who has witnessed the remarkable change from invalidism to first-rate health.

27. **Suppuration of Knee-Joint.**—Barker's line of treatment in all cases of inflammation of the knee, seen early, is to attempt by the Bier's bandage to arrest the inflammation. If it is obvious that this is not succeeding, as indicated by the advance of the effusion, the tenderness, and the raised temperature, he aspirates and ascertains the nature of the microorganism by smears and cultivation, keeping on the bandage for two hours morning and evening. If, in spite of this, the joint still shows signs of increasing mischief, he advises opening it, flushing it out with sterile normal saline solution, and bandaging as before. But in neglected cases aspiration should be done at once, and if the product shows the infection to be severe an incision should be made at once and the bandage applied.

By these means the last 6 or 7 patients treated by Barker have been led to steady recovery. In only one case, a very virulent infection, which had five days' start, the result was ankylosis. In another, also a bad infection, only seen three weeks after the onset, the result up to the present is good, the man walking about without pain, but with some limitation of flexion, which is improving. In all the rest recovery has been complete.

Journal of Laryngology, Rhinology and Otology, London

February

38 Latent Infections by Diphtheria Bacillus and Administrative Measures Required for Dealing with Contacts. R. M. Buchanan.
39 Administrative Measures Required for Dealing with Diphtheria Contacts. D. Forbes.
40 Examination of 240 Skulls with Reference to the Sphenoidal Sinus and the Sphenoethmoidal Cell. W. S. Syme.

Archives Générales de Chirurgie, Paris

January, IV, No. 1, pp. 1-110

41 *Vascular Tumors and Aneurisms in the Bones. A. Le Dentu.
42 *Invasion of Wall of Chest by Cancer in Pleura or Lung. (Propagation à la paroi thoracique des cancers pleuro-pulmonaires.) E. Tédenat and J. Martin.
43 *Peritonitis from Rupture of a Pyosalpinx. Lamouroux.
44 Operation for Hallux Valgus. (Ostéotomies obliques conjuguées du 1er métatarsien et de la 1re phalange pour hallux valgus.) Mauclaire.

41. **Vascular Tumors of the Bones.**—In one of Le Dentu's cases a pulsating sarcoma was found in the first metacarpal bone and in 6 others he found similar pulsating or vascular tumors in the femur, tibia or triceps. He has collected 9 cases in which a pulsating tumor in the bone seemed to be

independent of any malignant growth and 8 others in which even histologic examination failed to reveal such, but the preponderance of numbers of others in which malignant growths coexisted with the excessive development of the vessels or with a hematoma demonstrates, he thinks, the malignant nature of the process beyond question.

42. **Cancer in the Chest Wall Originating in the Lung.**—In the case described, a sarcoma in the pleura perforated the wall of the chest at two points and spread out in the subcutaneous tissue. The outer portion of this "shirt-stud growth" simulated a tuberculous abscess, as in 8 other cases on record. All proved fatal, and yet early operation may cure as in a case reported by Becker.

43. **Peritonitis from Rupture of a Pyosalpinx.**—Lamouroux reports a case in which the patient was saved by an early operation and has found 77 others on record, including 5 in Poncet's service. The first symptoms are insidious; first a little pain in the abdomen, then vomiting follows, the temperature rises and the pulse increases, the abdomen is soft but tender. The diagnosis is generally merely peritonitis from perforation. In 47 of the 78 cases prompt laparotomy saved 27 of the patients; the best results were always obtained when the ruptured tube was removed. The patients all died in the 31 cases in which no operation was attempted.

Lyon Médical, Lyons

January 9, XLII, No. 2, pp. 57-96

45 Nervous Motor Disturbances in Pott's Disease. X. Delore and A. Chalier.

January 16, No. 3, pp. 97-138

46 *Fixation Abscess in Treatment of Acute Bronchopulmonary Disease. A. Pic and A. Bonnamour.
47 *Ocular Complications of Diabetes. Grand and Clément.

46. **Fixation Abscess in Treatment of Acute Bronchopulmonary Disease.**—Pic injects 1 c.c. (16 minims) of turpentine under the skin of the abdomen or thigh in every case of severe pneumonia or bronchopneumonia, whether the special gravity is due to the debility, age or alcoholism of the patient or to the passage of the pneumococcus into the blood. The injection must be made early; diabetes, tuberculosis and anasarca are the only contraindications Pic mentions. If no suppuration follows, the prognosis is extremely grave. When suppuration commences, the general condition improves at once; the temperature declines the next day and polyuria follows by the second to the fifth day. There seems to be a salutary crisis like that of defervescence in pneumonia, and the patient feels better in nearly every way. Six recoveries followed the application of the fixation abscess in 10 very severe cases. In 78 cases on record in which this method of treatment was used 45 of the patients recovered, that is, 57 per cent. This speaks encouragingly for it, he says, as the measure is never applied except in the cases with especially grave outlook.

47. **Ocular Complications of Diabetes.**—Grand-Clément discusses the weakness of accommodation, iritis, cataract and amblyopia that may occur as complications of diabetes, as also hemorrhage in the retina which he regards as of specially grave import. The cataract engendered by the diabetes subsided under dietetic measures in his experience, as also the other complications except the hemorrhagic retinitis. In the 30 diabetic patients presenting patches of hemorrhage in the retina of one or both eyes, a large proportion of sugar was always present in the urine and of acetone in the blood. Although all the patients seemed comparatively robust, yet every one died in from 15 to 18 months.

Obstétrique, Paris

January, N. S., III, No. 1, pp. 1-103

48 *The *Spirochæta pallida*. (Le spirochète pale de Schaudinn.) A. Girauld.
49 *The Changes in Uterine Fibromyomas during Pregnancy and the Puerperium. G. Piquand and J. Lemeland.
50 *Excessive Salivation during Pregnancy. (Sialorrhée gravidique). A. Boissard.

48. **The Spirochæta Pallida in the Fetal Liver.**—Girauld examined the liver in 200 aborted or macerated fetuses or new-born infants. He never found spirochetes in the liver of the fetus before the sixth month, not even when the mother had florid syphilis, and he thinks that the question of abortion in syphilis deserves to be reconsidered. It is evident, on the other hand, that a macerated fetus is a syphilitic fetus in at least two-thirds of the cases. Spirochetes were found in the liver in the macerated fetuses even when the mother was apparently free from syphilis, possibly, he adds, of paternal origin. In some instances the mother had taken systematic mercurial treatment during her pregnancy and yet spirochetes were found in the liver of the fetus, suggesting that the courses in vogue are not vigorous enough. Another point suggested by the research reported is the necessity for mercurial treatment of the mother during a pregnancy even when her own infection is of many years' duration, and she seems entirely free from manifestations of the disease. Spirochetes long dormant in the women seem to find an especially favorable culture medium in the fetal liver. The findings in the placenta were almost invariably negative under all circumstances.

49. **Changes in Uterine Fibromyomas During Pregnancy.**—Piquand has found records of 82 cases of suppuration or gangrene of a fibromyoma following close on a pregnancy. Polyps are particularly liable to these changes on account of the interference with their circulation from the stretching and compression of their pedicle, while they are peculiarly exposed to infection. In 43 cases on record of interstitial fibromas with suppuration or gangrene, only 7 of the women survived.

50. **Excessive Salivation During Pregnancy.**—In the case reported by Boissard the patient, a woman of 36, had had six normal pregnancies; at the second month of her seventh, excessive salivation developed, the amount of the saliva collected ranging from 5 to 12 ounces a day. She lost over 25 pounds in weight in less than three weeks although her appetite was good and she took sufficient food and there was no vomiting. Saline infusion and belladonna did not arrest the salivation but the patient ceased to lose weight when ovarian treatment was instituted, and she regained nearly 9 pounds in four days. She then felt better and left the clinic so the final outcome is not known.

Presse Médicale, Paris

February 2, XVIII, No. 10, pp. 81-88

51 *Autoserotherapy of Ascites. V. Audibert and F. Monges.
52 *Pneumococcus Jaundice. (L'ictère pneumococcique.) A. Lemierre and P. Abrami.

February 5, No. 11, pp. 89-96

53 *Prognosis of Diabetic Cataract. F. de Lapersonne.
54 *Coma from Acidosis due to Suppurative Inflammation of the Liver. (Coma par acidose et abcès du foie.) M. Labbé.

51. **Autoserotherapy of Ascites.**—Audibert and Monges believe that they are the first to apply this method of autoserotherapy in treatment of ascites. The technic is similar to that of Gilbert in tuberculous pleural processes. They describe a case of ascites of hepatic origin in which benefit was derived from reinjection of the patient's own ascitic fluid, commencing with 3 c.c. and never surpassing 10 c.c. The injections were made at intervals of about 6 days and 12 injections were made in all. There was no pain, no local reaction, nor any apparent influence on the temperature or on the elimination of chlorids and urea. The main effect was a copious and persisting polyuria which brought about notable improvement in the general condition as the ascites was drained away. They withdrew salt from the diet, and they emphasize the injurious action of ingested salt in ascites resulting from liver disease. They now apply this autoserotherapy in all cases of recurring ascites. The fluid is aspirated and then the tip of the needle is partly withdrawn and then diverted and the fluid reinjected into the subcutaneous tissue.

52. **Pneumococcus Jaundice.**—Lemierre was able to cultivate the pneumococcus from the blood in three cases of pneumonia complicated with jaundice. Autopsy revealed inflammation in the parenchyma of the liver, the work of the pneumococcus; the inflammation in the vessels and ducts was secondary. This liver complication seems to develop preferably in persons with preexisting liver lesions. He adds that it is possible that the pneumococcus may localize exclusively in the liver without involving the lungs.

53. **Prognosis of Diabetic Cataract.**—De Lapersonne discusses separately diabetic cataract in the young and the elderly and

senile cataract in diabetics. Before attempting to operate, the general condition should be improved to the greatest possible extent; increasing debility, tuberculosis, hemorrhage in the retina and neuroretinitis all contraindicate intervention. The diabetes modifies the tissues, rendering them more liable to infection and prolonging healing. In one case the cicatrix left from the operation ruptured five weeks after it had apparently healed. He has also witnessed the development of hypostatic pneumonia after the operation. Another serious complication which he has encountered a number of times is a postoperative psychosis. Accidents of this kind, he asserts, are peculiarly liable in diabetics who generally combine the baleful factors of age, autointoxication and atony of the intestines. In one of his cases the psychosis did not occur for some time after the cataract operation but then severe neurasthenia developed, accompanied by transient delirium; the patient refused to conform to the dietetic regulations and died in diabetic coma. At the same time, these serious complications of cataract operations are rare; in the majority of cases the results are excellent, but it is necessary to weigh the pros and cons, commence with iridectomy and redouble the precautions at the time and afterward.

54. **Coma from Acidosis.**—The glucosuria in the case described by Labbé was evidently due, he says, to inflammation of the liver following a gastrointestinal affection five years before, entailing subacute hepatitis and abscess formation. The abscesses found at autopsy were apparently responsible for the intermittent fever observed. When the breath smells of acetone but coma is not impending, he adds milk, potatoes, rice or green vegetables to the diet and gives 20 gm. (300 grains) of sodium bicarbonate. But if coma is impending he gives from 100 to 200 gm. (from 3 to 6 ounces) every day. The sodium bicarbonate may be dissolved in water and sipped; it is astonishing, he remarks, how tolerant the digestive tract is of these large doses. If the patient vomits it or is unable to swallow, he infuses about a quart of a 3 or 4 per cent. solution into a vein, while more of the bicarbonate is injected into the rectum and the patient is made to drink large amounts of milk. This intensive treatment should be continued so long as the urine gives an acid reaction.

Revue de Médecine, Paris

January, XXX, No. 1, pp. 1-210

55 *Hemophilia; Pathogenesis and Treatment. II. P. Nolf and A. Herry.
56 Radiotherapy in a Case of Exophthalmic Goiter. R. Lépine.
57 *Advantages of Alkaline Intravenous Injections to Ward off Diabetic Coma. Id.
58 *Pneumonia Attended with Splenization of the Lung. IV. Mosny and Malloizel.

55. **Hemophilia.**—Nolf and Herry report considerable research on the various elements of the serum to explain their interaction, especially in production of hemophilia.

57. **Intravenous Alkaline Injections to Ward Off Diabetic Coma.**—Lépine has succeeded in warding off diabetic coma in a number of acetonemic diabetic patients during the premonitory stage of the coma. More rapid breathing, with other symptoms, indicated the impending disaster; it was only a question of a few hours more or less. After acetonemic coma is installed, the alkaline injections have only a temporary, if any, effect, but given in time, Lépine declares that they ward it off. Several patients examined a number of months after the preventive intravenous injection of an isotonic solution of sodium bicarbonate were in satisfactory condition. In one case the glucosuria was modified and the acetonemia had nearly entirely subsided when examined eight months later.

58. **Pneumonia with Splenization of the Lung.**—This study of splenopneumonia concludes with detailed reports of 23 cases of tuberculous splenopneumonia to illustrate the variety of the syndrome in individual cases. The necessity for suspecting tuberculosis in every case of splenopneumonia is emphasized. The sputum should be examined early for tubercle bacilli, the apices auscultated every day, convalescence supervised with special care and watch kept over the patients for a long time afterward. Tuberculous splenopneumonia seems to be most common in the young and in women, especially after a pregnancy or overwork. In only 4 out of 11 such cases at the Broussais hospital was an inherited taint evident.

Semaine Médicale, Paris

February 2, XXX, No. 5, pp. 49-60

59 Meckel's Diverticulum in Development of Intestinal Stenosis. (Diverticule de Meckel et rétrécissements de l'intestin.) F. Lejars.

February 9, No. 6, pp. 61-72

60 *Epigastric Galloping Sound. (Le bruit de galop épigastrique et sa signification clinique.) M. Roch.

60. **Gallop Sound Heard in the Epigastrium and its Significance.**—Roch regards the gallop sound as evidence that the heart is making an effectual effort to restore the balance. When the myocardium gives up the struggle, the gallop sound is no longer heard. It should therefore, he asserts, not be considered a sign of an unfavorable prognosis. He reports a case in which the right heart alone was responsible for the gallop rhythm, as determined at autopsy. In another case with a gallop sound in the epigastrium, the patient had chronic nephritis and the left heart was responsible for the symptoms, but it was buried under a layer of emphysematous lung. The diagnosis at first was essential asthma with emphysema until the urine findings differentiated toxic dyspnea. The areas for the gallop sound from the right and the left heart are so close together that the slightest displacement of either confuses the focal findings. Another source of error is the extreme tendency of the neurotic to cardiac irregularity. Roch has been unable to find any signs directly pathognomonic for a right gallop sound, but it should be suspected if lung, stomach or liver disease can be excluded, distrusting it, however, if it proves transient, and strongly suspecting nephritis when it persists.

Beiträge zur Klinik der Tuberkulose, Würzburg

XV, No. 1, pp. 1-180. Last indexed Dec. 25, p. 2180

61 *Results with Combined Institutional and Tuberculin Treatment of Pulmonary Tuberculosis. (Die Leistungsfähigkeit der kombinierten Anstalts- und Tuberkulinbehandlung bei der Lungentuberkulose.) Bandelier.

61. **Combined Sanatorium and Tuberculin Treatment of Pulmonary Tuberculosis.**—Bandelier's report fills the entire number and gives the details of 500 cases, all in women, the tables filling 135 pages. He believes that the results attained far surpass those of any similar series yet published. Only 18 of the total number of patients were not benefited and these were all in the third stage of the disease, while 32.8 per cent. in this stage regained complete earning capacity. In 17.2 per cent. of the total number the patients were apparently entirely cured; 90.4 per cent. in the first stage and 80.7 per cent. in the second regained full earning capacity, and an additional percentage of 9.6 per cent. in the first stage, 19.2 per cent. in the second, and 53.4 per cent. in the third stage regained sufficient earning capacity for the legal standard. The results were thus positive in 100 per cent. of the 83 patients in the first stage of the disease; in 100 per cent. of the 286 patients in the second, and in 86.2 per cent. of the 113 patients in the third stage of the disease. There were complications of various kinds in many cases; 53 of the 83 in the first stage were more or less anemic; 10 had laryngitis; 32, fever for months. The vital capacity increased on an average 290 c.c., the excursions by 0.91 cm. The benefits of the combined treatment are shown more particularly, he says, in the 286 patients in the second stage, including 224 with anemia, 4 with severe gastrointestinal disturbances, 23 with neurasthenia, 9 with hysteria, 18 with extreme nervousness, 14 with goiter and 2 with exophthalmic goiter, 1 with chorea, 6 with albuminuria, 1 with lupus, laryngitis in 42, the tuberculous nature not certain, and 19 with tuberculous laryngitis, 13 with tuberculous ulcerative laryngitis (5 completely cured, 8 much improved), 56 with fever. The vital capacity increased by 360 c.c., the excursions by 1 cm. The complications are recorded in his tables which show further the findings on entering and leaving in regard to the lungs, sputum, weight, vital capacity, chest measurements, the number of days in the tuberculin course and the earning capacity on dismissal. As the organism gains strength from the sanatorium treatment, it becomes better able to respond to the stimulus from the tuberculin. The whole secret of the conflicting results obtained by different clinicians, he asserts, is in the different length of the tuberculin courses—those who have given short

courses have not obtained as favorable results as those able to prolong the course beyond the usual three months. In this period the tuberculin has only just begun to get in its work. And here the cooperation of the general practitioner to continue the course is the *sine qua non* for effectual results. The average length of Bandelier's courses was five or six months. He gives the tuberculin according to the principle of reaching the maximal dose and injecting this maximal dose at longer and longer intervals, striving to maintain the "tuberculin immunity" as long as possible, thus stimulating and keeping up the production of antibodies. In his patients in the second and third stages the bacilli and sputum did not disappear until after large doses of tuberculin were being given. He emphasizes the influence of the tuberculin in arresting the symptoms resulting from absorption of the toxins generated by the tubercle bacilli: palpitations, headache, night sweats, loss of appetite and languor. In some of his cases vasomotor disturbances lasting for years, with rebellious sweats day and night, subsided entirely under the influence of the tuberculin.

Berliner klinische Wochenschrift

XLVII, No. 4, pp. 133-176

62 *Fatal Transmitted Vaccinia. (Ueber schwere Vaccineerkrankungen und ihre Prophylaxe.) A. Géronne.
63. Theories in Regard to Increased Blood Pressure in Nephritis. (Zur Marcuse'schen Theorie der nephritischen Blutdrucksteigerung.) H. Beitzke.
64 Recovery from Severe Diabetes in Woman of Twenty-nine. S. P. Swart.
65 Behavior of the Complement in the Seroreaction. (Verhalten des Komplements bei der Komplementbindungsreaktion.) L. Michaelis and P. Skwirsky.
66 *Differentiation of Pain from Pressure and on Release from Pressure in Appendicitis and Peritonitis. (Das peritoneale Druck- und Zugschmerzphänomen in seiner Bedeutung für die Prognose und Operationsindikation bei Appendicitis und Peritonitis.) M. Blumberg.
67 Deforming Arthritis after Typhoid. (Zur Kenntnis der Aetiologie der Arthritis deformans.) J. Rothschild.
68 *Postappendicitic Priapism. F. Rosenthal.
69 Emissions, Spermatorrhea and Impotency for which the Prostate is Responsible. M. Porosz.

62. Dangers of Inoculation of the Unvaccinated from Vaccination Pustules.—Géronne calls attention to the facts that the lymph from a vaccination pustule is much more virulent than ordinary vaccine, and that when inoculation occurs much larger amounts are inoculated than are used in vaccinating, also that the inoculation generally occurs on some patch of eczema or similar lesion so that the virus is absorbed more rapidly and over a larger area than in vaccination. In a case described, a healthy two-year-old child was accidentally inoculated with virus from the vaccinated arm of a brother. The vaccinia assumed a grave form, suggesting confluent variola and proving fatal in 16 days. Autopsy showed suppurative otitis media and septic sinus thrombosis. He refers to 140 cases, compiled by Blochmann, of similar inoculation of the unvaccinated, including 61 cases in which the eyes were involved in the process. In 20 cases, the inoculation occurred on a patch of eczema and the resulting vaccinia was extremely severe, with 6 fatalities. Eight other equally severe cases have been reported more recently. Géronne urges the necessity for protecting the vaccination pustule in such a way that contagion of others is impossible—he would like to have a protecting device made compulsory—and he also advises against attempting to vaccinate in any family in which there is a case of eczema. The family should also be warned that inoculated vaccinia is a much severer affection than the vaccination pustule.

66. Peritoneal Pain on Pressure and on Abrupt Release of Pressure.—Further experience has confirmed the importance of Blumberg's sign of peritonitis, first described in 1907. It is instructive in appendicitis, revealing an inflammatory reaction on the part of the peritoneum possibly before any other signs of the disease become manifest. The patient is asked if he feels pain when the hand is pressed down over the appendix; this is pain A. Then the hand is suddenly and completely lifted from contact with the abdominal wall, and the patient is asked if he feels pain as this is done; this is pain B. Each pain represents different conditions; the pressure pain reveals the lesion below. As the hand pressing down is suddenly raised, the elastic abdominal wall springs back into place, and this pulls and draws on the peritoneum, causing pain if the peritoneum is inflamed but not in normal conditions. When this pain is marked, early in appendicitis, it is a signal of impending danger.

68. Post-Appendicitic Priapism.—In Rosenthal's case colon bacilli from an appendicitic abscess set up a thrombophlebitis causing priapism which gradually subsided with the abdominal lesions. Puncture of the right corpus cavernosum hastened the cure.

Deutsche medizinische Wochenschrift, Berlin

February 3, XXXVI, No. 5, pp. 201-248

70 Nomenclature of Conceptions of Disease. (Pathos und Nosos.) L. Aschoff.
71 Question of Infection of Man with Bovine Tubercle Bacilli. (Zur Frage der Tuberkuloseinfektion des Menschen durch Perlsuchtbazillen.) B. Möllers.
72 Tubercle Bacilli in Sputum in Pulmonary Disease. (Zur Frage der im Auswurf Lungenkranker vorkommenden Tuberkelbazillen.) Dieterlen.
73 *Treatment of Tuberculosis with Large Doses of Tuberculin. J. Neumann.
74 *Intravenous and Intramuscular Injection of Large Doses of Antitoxin in Treatment of Diphtheria. Berlin.
75 Obliterating Capillary Bronchitis after Diphtheria. C. Colombino.
76 *Dangers of General Anesthesia with Part of Circulation Shut Off. (Gefahren der Narkosen bei künstlich verkleinertem Kreislauf.) E. Gräfenberg.
77 *Importance of Spirochetes for Clinical Diagnosis of Syphilis and India Ink Preparations. (Bedeutung des Spirochätennachweises für die klinische Diagnose der Syphilis.) W. Scholtz.
78 Results with Barium Sulphate Modification of the Wassermann Test. (Ergebnisse der Wassermannschen Reaktion bei Vorbehandlung der Sera mit Baryumsulfat nach Wechselmann.) C. Lange.
79 Demolition of Colles' and Profeta's Laws by Seroreaction in Syphilis. F. Bering.

73. Treatment of Tuberculosis in Children with Large Doses of Tuberculin.—Neumann has been testing the tolerance of children for large doses of tuberculin, his experience showing that they can bear much higher doses than has hitherto been deemed possible. He regards the local reaction to the subcutaneous injection of tuberculin as the best test of the effect of the treatment. He does not increase the dose until the local reaction has subsided. These local reactions continue with the same dosage for quite a while after there is no further temperature reaction, or they may be pronounced when there is no temperature reaction. At first the infiltration is perceptible for a week or more, but as the reaction grows less the infiltration is more and more transient and disappears within a few hours. He waits before increasing the dose until the local reaction is much less. In a case described in detail, a boy of 4 with rachitis and pronounced cutaneous reaction who was much debilitated, never having walked or talked, improved amazingly under tuberculin, commencing with about 0.0001 gm. and reaching the dose of 0.5 gm. in about six months. The intervals were from 1 to 6 or more days. He has never witnessed such rapid improvement without the tuberculin in any case. The temperature curve, he says, during the tuberculin course is that of a "remittent subnormal fever." He warns, however, that one cannot be too cautious in tuberculin treatment when the focus is in the vicinity of the central nervous system, citing the experiences with the tuberculin test in cases of tuberculous meningitis. He has also noted more or less dyspnea in certain cases after the injections of tuberculin, which he ascribes to a reaction in tuberculous bronchial glands. In one case phlyctenular conjunctivitis developed; he does not know whether to ascribe it to the tuberculin or not.

74. Intravenous Injection of Antitoxin in Treatment of Diphtheria.—Berlin reports favorable experiences with 120 children with severe diphtheria; he did not hesitate to give up to 16,000 units by intravenous or intramuscular injection. There were no by-effects and no disturbances even from these large amounts of antitoxin, notwithstanding that it contained a certain proportion of carbolic acid as preservative.

76. The Dangers of General Anesthesia with Part of the Circulation Cut Off.—Gräfenberg has been applying Klapp's method of shutting off the circulation by an Esmarch bandage applied to the legs but found that 6 patients developed thrombosis among the 75 laparotomized. None of the patients was subject to varicose veins. The thrombosis in the leg in each case was transient and harmless, but it has convinced him

that this method has too many dangers and he has now abandoned it. He remarks that the thrombosis developed exclusively after laparotomies, nothing of the kind having been observed after 110 vaginal operations.

77. **India Ink Microscopic Diagnosis of Syphilis.**—Scholtz expatiates on the simplicity and reliability of the India-ink technic for showing up the pale spirochete. A small drop of the serum on the slide is mixed with a small drop of distilled water and a small drop of the mixture is transferred to another slide. Half this amount of India ink is then added and mixed and spread out over the slide with the edge of another; the material is then dry and ready to be examined in half a minute. The field looks like a photographic negative; the objects in the field are comparatively colorless against the dark background. The spirochetes show up in well-made India ink specimens as clearly as with the ultramicroscope.

Medizinische Klinik, Berlin

January 30, VI, No. 5, pp. 167-206 and Supplement

80 *Moral Infirmity in Children. (Moralischer Schwachsinn im Kindesalter.) W. Stoeltzner.
81 Determination of Tubercle Bacilli in the Sputum. (Methodik und Technik der neueren Verfahren zum Nachweis von Tuberkelbazillen im Sputum mit besonderer Berücksichtigung des Uhlenhuthschen Antiforminverfahrens.) Schulte.
82 *Value of Tuberculin in Treatment of Tuberculosis. W. v. Leube and others. Commenced in No. 1.
83 Vinegar for Softening Strip to Cut in Removing Plaster Casts. (Zur Technik der Abnahme der steifen Verbände.) M. Stransky.
84 Saponin Hemolytic Reaction in the Cerebrospinal Fluid in Organic Nervous Disease. (Eine biologische Reaktion im Liquor cerebrospinalis bei organischen Nervenkrankheiten.) A. Hauptmann.
85 Aphasia. K. Goldstein.

89. **Moral Weakness in Children.**—Stoeltzner discusses the children who seem to have a natural tendency to cruelty and malice and the advice that should be given the parents. He advises in the severer cases placing the child in a psychiatric institution for better study of the case, and a record kept that may be of use later if the child comes into collision with the criminal law, as is liable to be the case. He suggests the advantages of a colony for the incorrigible.

82. **Tuberculin in Treatment of Pulmonary Tuberculosis.**—In this symposium von Leube reports that decided clinical improvement was realized in 30 to 50 per cent. of 150 patients in the second and third stage of pulmonary tuberculosis injected twice a week with from 0.00001 gm. up to 0.1 gm. at intervals of three or four days, the course lasting about four or five months. Moritz also reports favorable experiences, and Müller states that he has witnessed remarkable improvement in a number of cases and some complete cures in the last eighteen years under tuberculin treatment. Not only tuberculosis of the lungs but also of the peritoneum, of the urogenital apparatus and of the eye are included in this list. He prefers the smallest doses and avoidance of any general reaction. Soltmann is not a friend of tuberculin treatment, and Heubner does not approve of it for pulmonary tuberculosis in young children; when the lungs are involved in children, the disease is no longer in an early stage. At the same time he has been much pleased with the results of tuberculin in incipient tuberculosis in young children when it is still confined to the glands. A cautious course of tuberculin treatment for two months has an unmistakable influence on the general condition as well as on the scrofulous symptoms. He has been unable, however, to obtain any reliable data as to the immunization from such a course in respect to tuberculous infection later. Hospital material is too shifting to permit this.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

February, XXXI, No. 2, pp. 151-274

86 *Autoinfection and Rubber Gloves. (Händekeime, Selbstinfektion, Gummihandschuhprophylaxe.) F. Ahlfeld.
87 *Duration of Bed-Rest after Delivery not a Factor in Development of Retroversion. (Inwieweit wird die Entstehung der Retroversioflexio durch längere oder kürzere Bettruhe nach der Geburt beeinflusst?) F. Heimann.
88 Congenital Defects in Skull Resulting from Amniotic Adhesions. (Kongenitale Defekte am Schädel infolge amniotischer Verwachsungen.) E. Kehrer.
89 Etiology of Associated Malformations of Female Urinary and Genital Apparatus. (Aetiologie der gleichzeitigen Missbildungen des weiblichen Harn- und Geschlechts-Apparates.) W. Weibel.

86. **Autoinfection of Parturients.**—Ahlfeld states that the placenta had to be removed by hand in 88 out of 8,000 childbirths in his service, exclusive of cases of placenta prævia. Manual examination was also undertaken in 45 other cases. The uterus was thus entered in 133 cases during the third stage of labor, and yet in 46.6 per cent. of the cases the puerperium was afebrile. In the 7 fatal cases the mortality was the result of eclampsia or hemorrhage or the patient had presented symptoms of sepsis before delivery. Gloves are not used and yet the morbidity is less than that reported from clinics where gloves are systematically used. The morbidity is evidently the result, he declares, of importation of germs from the patient's own tissues—autoinfection—the germs being carried in by the bare or gloved hand.

87. **Bed-Rest After Childbirth and Development of Retroversion.**—Heimann compares the findings in regard to development of retroversion later in Küstner's service at Breslau, grouping the cases according as the patients were allowed to get up in from 2 to 4 days after delivery, after the fifth day, or not until after the ninth day. The proportion of cases in which retroversion developed later was only from 0.45 to 0.8 per cent. in the 2,562 women allowed to get up from the second to the fourth day, while it ranged from 1.3 to 2.1 per cent. in the second group, and from 2 to 2.7 per cent. in the third group, both containing even a larger number of parturients. Each group includes all the labor cases in four-year periods.

Münchener medizinische Wochenschrift

February 1, LVII, No. 5, pp. 225-280

90 *Intestinal Sounds with Metallic Resonance as Sign of Obstruction. (Metallisch klingende Darmgeräusche und ihre Bedeutung für den Darmverschluss.) M. Wilms.
91 *Nerve Transplantation for Flaccid Paralysis. (Nervenüberpflanzung bei schlaffen Lähmungen.) A. Stoffel.
92 Transmission of Poliomyelitis to Monkeys. (Weitere Mitteilungen über experimentelle Affenpoliomyelitis.) P. H. Römer.
93 The Typhoid Bacillus in Development of Suppuration. (Der Typhusbazillus als Eitererreger.) O. Hess.
94 Importance of Bovine Tuberculosis for Development of Tuberculosis in Children. (Bedeutung der Rindertuberkulose für die Entstehung der Tuberkulose im Kindesalter.) M. Hohlfeld.
95 *The *Bacillus faecalis alcaligenes* Pathogenic for Man. A. Hamm.
96 Physical Bases for Thermopenetration. (Diathermie, Transthermie, Thermopenetration.) B. Walter.
97 *Tamponing in Treatment of Placenta Prævia. K. Heil.
98 Varying Bactericidal Properties of Human Blood. (Ueber Unterschiede in der Streptokokken gegenüber zur Geltung kommenden bakteriziden Wirksamkeit des menschlichen Blutes, insonderheit des Zitratblutes.) F. Loening.
99 *School Medical Inspectors. (Schulärzte.) Henkel.

90. **Metallic Sounds in the Intestines as Early Sign of Obstruction.**—Wilms calls attention to the sounds heard on auscultation as fluid collects above an obstruction and the peristaltic movements sway the fluid and the air in it rises to the surface of the fluid in bubbles, which burst as they reach the surface; drops from above also fall on the surface. The sounds made by the bursting bubbles and falling drops have a clear metallic ring and can be detected by auscultation very early in case of obstruction, much earlier than the gurgling sounds which are not heard until long stretches of the bowel are involved. These metallic sounds are of auto-origin and the thickness of the abdominal wall does not seem to interfere with their perception. They indicate that the intestine is distended with fluid and air from some obstruction, and they are thus, he asserts, pathognomonic of ileus; the sounds may be sometimes heard after a laparotomy but the conditions here will not prove misleading. In a year's experience with this sign he has found it reliable for differentiating mechanical obstruction and also for excluding ileus in the absence of the metallic sounds. In several cases the patients were sent to the hospital with the diagnosis of ileus, but the lack of metallic sounds spoke against this diagnosis, and the patients recovered without an operation. In others the operation confirmed the diagnosis, based mainly on the positive findings of the metallic sounds. The sign is thus important and decisive, and its appearance in the early phases of ileus is especially instructive.

91. **Transplantation of Nerves in Treatment of Flaccid Paralysis.**—Stoffel asserts that it is possible to separate in the nerve trunk the fibers which ramify off below into various branches. This is especially important in transplanting nerves

as only the fibers involved need be transplanted. He gives the details of four cases in which a plastic operation was done on the musculocutaneous and musculospiral nerves. The results were satisfactory and confirm the advantages of separating the fibers so that the intervention can be on the fibers directly involved. He reports several examples; the operation was done in the axilla and the deltoid muscle regained apparently its normal functioning and excitability.

95. **The *Bacillus fecalis alcaligenes* in Human Pathology.**—Hamm's patient was a primipara of 29 with fatal puerperal pyelonephritis and peritonitis with this bacillus in pure cultures in the urine and pus.

97. **Tamponing in Treatment of Placenta Prævia.**—Heil pleads for the advantages of tamponing as the quickest, easiest and most certain means of arresting hemorrhage in certain cases of placenta prævia if the obstetrician knows how to do it properly; otherwise it is a dangerous procedure, and he urges every one to practice it until proficient. He applied it in 8 out of 28 cases of placenta prævia and 5 of the women had an afebrile puerperium, while in the 3 cases with fever it is doubtful whether the tamponing was responsible. The metreurynter should always be given the preference, but when for any reason this is not advisable the tamponade is the only resource. He places the woman on her side and wipes out the vagina with cotton dipped in a disinfectant; if the tampon is to be carried into the cervix, he draws down the lip and introduces the strip of gauze with long forceps, packing the tampon firm in the cervix and then in the vagina, plugging it toward the last with strips of cotton. The posterior vagina must be packed with special firmness to prevent blood from oozing behind the tampon. It must not press too hard on the urethra. A third point is to pack the outer part of the vagina with cotton as gauze drains too much.

99. **Medical School Inspectors.**—Henkel concludes his dissertation on the task of the medical school inspector by emphasizing that the individual hygiene of the school child is what he has to bear in mind and watch over during the entire period of school life, keeping records in a style uniform for all the medical inspectors in the country, with a similar uniform method of reporting at the close of each school year.

Therapie der Gegenwart, Berlin

February, LI, No. 2, pp. 49-96

100 *Treatment of Scarlet Fever. (Behandlung des Scharlachs.) A. Baginsky.
101 *Balneologic Measures in the Home. (Das Sauerstoffbad in der ärztlichen Hauspraxis.) J. Baedeker.
102 Development of Exophthalmic Goiter Four Years after Removal of a Goiter. (Zur Frage der operativen Behandlung des Morbus Basedowii.) J. Lowinsky.
103 Aphorisms on Treatment of the Heart. C. A. Ewald. Commenced in No. 1.
104 Intravenous Atoxyl-Iodid Treatment of Exophthalmic Goiter. F. Mendel.

100. **Treatment of Scarlet Fever.**—The first part of Baginsky's article was reviewed in these columns February 12, page 576. He here discusses the complications of the disease, and warns to be on the lookout for otitis media. Ice to the ear and region, and, possibly, instillation of a 1 or 2 per cent. carbolized glycerin frequently arrest the process if commenced at the first signs of inflammation, redness and protrusion of the tympanic membrane and sensitiveness. With signs of suppuration in the middle ear, especially when the temperature is inclined to be febrile, not a moment should be lost before puncturing the membrane, following with the usual antiseptic measures, carbolized glycerin, boric acid solutions, etc., and draining with iodoform gauze. If the process remains restricted to the ear it may subside without material injury, but if the mastoid becomes tender, general pyemic infection is liable to follow rapidly. The general practitioner must recognize the processes going on in the ear in time for successful interference, not allowing the chill to be the first warning that the patient is on the way to fatal pyemia. Even more important is the early recognition and treatment of complicating nephritis. In the last three years he has had 729 scarlet fever patients and 88 had nephritis when they entered the service; only 36 developed this complication in the hospital and there were no uremic symptoms or hydrops in any instance and no fatalities from the nephritis. He treats it by restricting the children to an exclusive milk diet, and giving a sweating bath daily or as needed. This prevents development of hydrops and its train of bronchitis, pleurisy, phlegmons, etc. Occasionally diuresis was promoted by an alkaline mineral water but no drugs were given unless digitalis was indicated for the heart. If the diuresis becomes excessive, he gives gruels instead of part of the milk. In case hydrops has already developed and there is much fever, it may be necessary to apply a cold pack and induce sweating in this way. This requires courage, but with a sip of champagne or injection of camphor wonderful results may be attained, even in apparently desperate cases. Impending anuria with severe hemorrhagic nephritis and myocarditic disturbances may require digitalis. Venesection may help to tide the patient past the danger phase in uremia, evidenced by vomiting, amblyopia, coma and convulsions. He adds in conclusion that children who have had scarlet fever should be kept under supervision for a long time; the indications here are the same as in chronic nephritis.

101. **The General Practitioner as Balneologist.**—Baedeker declares that a wide field for efficient treatment of neurasthenia, heart and other affections is opened by the introduction of balneologic measures into the home. He describes his method of prescribing "nascent oxygen baths," recording before the bath and again half an hour or an hour afterward the findings in regard to the pulse rate and force, the radial blood pressure, the nature of the heart sounds, the limits of the heart, and the depth and length of the inspirations and expirations. He says that it is practicable to make the first call on the patient and then go on to others in the vicinity, stopping in again on the way back and thus keeping the accurate record of each case. He prefers to have the baths taken while the patient feels strongest, between 10 and 12 in the morning. The patient should be able to give up half the day, as he has to recline an hour or so after each bath. A systematic course of baths can thus be taken at home without the necessity for an expensive trip to a watering-place. Tank oxygen cannot be advantageously used for baths; the gas should be generated in the water by chemical means to secure practical results.

Wiener klinische Wochenschrift, Vienna

February 8, XXIII, No. 5, pp. 153-190

105 *Whooping Expiration and Roentgen-Ray Findings with Tuberculous Process in Pulmonary Glands in Young Children. (Exspiratorisches Keuchen als Symptom der Lungendrüsentuberkulose im ersten Lebensjahre.) B. Schick and E. Sluka.
106 *Clinical Importance of Chvostek's Sign in Children. (Bedeutung des Fazialisphänomens im Kindesalter.) B. Sperk.
107 *Symptomatology of Cerebral Arteriosclerosis. M. Herz.
108 Connection between Seroreaction and Antisyphilitic Treatment. (Zur Frage des Zusammenhanges zwischen Wassermannscher Reaktion und antiluetischer Behandlung.) G. Kiralyfi.
109 *Symptomatology and Treatment of Secondary Inflammation of Salivary Glands. (Speicheldrüsenentzündung.) M. U. C. G. Weinländer.

105. **Whooping Expiration as Early Symptom of Tuberculosis in Infants.**—Schick calls attention to the whooping nature of expiration in infants who develop signs of tuberculosis later. In 20 of the 36 children in whom he noted the sign, it first attracted attention when the infants were between 2 and 4 months old; the others were between 4 and 10 months. In 5 other cases the children were from 1 to 5 years old and in their cases the symptom was caused by pneumothorax or compression of the air passages from various causes. Seven of the 36 infants presenting this sign are still living and the fate of 7 is not known; the others have died. He regards this as a striking and valuable diagnostic symptom of a tuberculous process in the bronchial glands in early infancy. It excludes other affections which might suggest tuberculosis: croup, asthma and bronchitis in which the whooping sound occurs during inspiration as a rule.

106. **Chvostek's Sign in Children.**—Sperk has tested a number of infants for this sign and found it rare during infancy. The isolated sudden spasm on tapping one side of the face is encountered more frequently between 5 and 14, the frequency increasing with the age. The children are mostly delicate and nervous, with other signs of nervousness, exaggerated knee-jerk and diminished or lacking corneal and throat reflexes. The connection of the isolated facial phenomenon with tetany

is unmistakable in many cases. Sperk examined 213 children for this sign, repeating the tests at intervals in 61 cases.

107. **Symptoms of Arteriosclerosis in the Brain.**—Herz discusses here the frequent brief loss of consciousness which is a sign of cerebral arteriosclerosis. He explains it as a momentary interruption of cerebration in consequence of a sudden arrest of the circulation in the smallest vessels inside the skull. He ascribes it to extrasystoles, the disturbing action of which the rigid arterial walls are not able to compensate for, as in health. When extrasystoles are accompanied by symptoms on the part of the brain this speaks unmistakably for cerebral arteriosclerosis. The extrasystole may be caused by reflex action originating in the gastro-intestinal tract. The main feature of the attacks in question is the sudden stoppage of the brain functioning, either suddenly, without premonition, or connected with alarming sensations, but the attack is over in a few seconds. The sudden return of complete consciousness, the entire lack of remembrance of the interval of unconsciousness, are important criteria of these attacks. In ordinary syncope the patient has a more or less pronounced weakness to overcome. He relates a number of typical cases; in one a robust butcher strolling down the street started to put his cigar in his mouth and suddenly noticed that a man had seized his arm. He struck the man, believing that he was being attacked, until a third passer-by explained that he had seen the man seize the butcher as he began to sway and had thus prevented his falling prone on the pavement. Herz warns of the necessity for differentiating this condition from neurasthenia. In treatment, iodin and physical measures are indicated; the nitrites are entirely inefficient; theobromin is likely to be injurious. Regulation of the diet is of supreme importance.

109. **Secondary Inflammation of the Salivary Glands.**—Weinländer reports ten cases of this kind with a suppurative discharge from the parotid duct, all observed in Pichler's service at Klagenfurt. He thinks that gentle stroke massage, with moist heat, may promote the cure. The inflammation was secondary to pneumonia, paralysis, typhoid or erysipelas, and only four of the patients recovered.

Zeitschrift für Urologie, Berlin

January, IV, No. 1, pp. 1-80

110 The Bladder in Bilharzia Disease and relations to Urinary Calculus Formation. (Die Harnblase bei Bilharziakrankheit und ihre Beziehungen zur Urolithiasis.) W. Ebstein.
111 *Experimental Isolation of the Ureters. (Zur Frage der Isolierung der Ureteren.) T. L. Kobylinski.
112 *Pyelitis. Kapsammer.

111. **Experimental Isolation of the Ureters.**—Kobylinski reports the results of operations on 4 cats and 2 dogs undertaken for the purpose of determining the effect on the functioning of the urinary apparatus of exposing a longer or shorter stretch of the ureter, isolating it from the peritoneum and the retroperitoneal connective tissue. Neither macroscopically nor microscopically could any appreciable difference be detected between this ureter and its connected kidney thus treated and the intact mate. The wealth and multiplicity of the sources of its blood supply and of its innervation seem to protect it against serious injury from such manipulations. Injection of methylene blue into the aorta revealed an astonishing vascularization in the region.

112. **Pyelitis.**—Kapsammer remarks that an isolated pyelitis without participation of the adjoining kidney parenchyma in the process is recognizable only histologically. As a rule, the infection arrives by way of the blood. When the pyonephrosis is primary, the suppuration precedes the dilatation of the kidney hilus; the ureter is narrow and short, and there is no compensating hypertrophy of the other kidney. When the pyonephrosis is of secondary origin, the hilus becomes dilated before suppuration occurs; the ureter is dilated and long and the kidney shows compensating hypertrophy. The circumstance that with the chronic form there are seldom appreciable symptoms on the part of the hilus and that the secondary symptoms in the bladder overshadow all others, led to the false assumption that the trouble was inevitably due to ascending infection. Colics with bladder tenesmus are characteristic of acute obstruction of the ureter. Colic pains without the bladder tenesmus suggest acute distention of the capsule. Catheterization of the ureter locates the trouble but its severity and extent can be learned only by functional tests, and accurate knowledge of the anatomic condition of the pathologic kidney is indispensable for successful local treatment by the ureter catheter. It is important to refrain from stretching the bladder and the kidney hilus, especially in the acute cases so that instillation is alone permissible. Flushing out with quantities of fluid is allowable only in the subacute and chronic cases. The local treatment may be effectually supplemented by a course of alkaline mineral waters. But they should not be ordered haphazard; in cases of alkaline pyelonephritis, renal tuberculosis, pyelitis from phosphate stones and hypertrophied prostate, the alkaline waters are liable to do direct harm.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 30, XXXI, No. 13, pp. 129-144

113 Small Epidemic of Cerebrospinal Meningitis in Italy. S. Lopriore.
114 Idiopathic Edema in Child of Four. (Caso di edema essenziale dei bambini.) G. Giarratana.

Policlinico, Rome

February 6, XVII, No. 6, pp. 163-194

115 Color Blindness. (Del Daltonismo.) A. Neuschuler.

Ugeskrift for Læger, Copenhagen

February 3, LXXII, No. 5, pp 115-142

116 *Mongolian Idiocy in Children. (Den infantile Mongolisme.) H. Scharling.

116. **Mongoloid Idiocy.**—Scharling discusses the differential diagnosis of infantile mongolism as distinguished from myxedema and cretinism, and describes a number of typical cases in his care at the Brejninge home for feeble-minded. The child is born with the characteristic signs of mongolism, while the characteristics of myxedema and cretinism develop after birth and continue a progressive course which is not the case in mongolism. In the latter, the aspect depends more on the skeleton than on the skin, while with the former it is the changes in the skin which are most striking. Thyroid treatment has no specific action in mongolism, although some of the secondary features may vanish under it.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

DAS ALTERN SEINE URSACHEN UND SEINE BEHANDLUNG DURCH HYGIENISCHE UND THERAPEUTISCHE MASSNAHMEN. Ein Handbuch für eine rationelle Lebenweise. Von Dr. A. Lorand, Badearzt in Karlsbad. Paper. Second Edition. Price, 5 marks. Pp. 259. Leipzig: Verlag von Dr. Werner Klinkhardt, 1910.

THE BACTERIOLOGIST'S AID TO MEMORY (A HANDY REFERENCE SHEET FOR THE LABORATORY). By J. W. S. Seccombe, M.R.C.S., Captain, Royal Army Medical Corps. Paper. Price, 3 shillings 6 pence. London: John Bale, Sons, and Danielsson, Oxford House, 83 Great Titchfield St., Oxford St., W.

ANATOMY AND PHYSIOLOGY FOR NURSES. By LeRoy Lewis, M.D., Surgeon to and Lecturer on Anatomy and Physiology for Nurses at the Lewis Hospital, Bay City, Mich. Second Edition. Cloth. Price, $1.75 net. Pp. 344, with 161 illustrations. Philadelphia: W. B. Saunders Co., 1910.

MODERN SURGERY (GENERAL AND OPERATIVE). By John C. Da Costa, M.D., Professor of Surgery and Clinical Surgery in Jefferson Medical College, Philadelphia. Sixth Edition. Cloth. Price, $5.50 net. Pp. 1502, with 966 illustrations. Philadelphia: W. B. Saunders Co., 1910.

THE ELEMENTS OF THE SCIENCE OF NUTRITION. By Graham Lusk, Ph.D., Professor of Physiology at Cornell University Medical College, New York City. Second Edition. Cloth. Price, $3 net. Pp. 402, with 13 illustrations. Philadelphia: W. B. Saunders Co., 1909.

THIRTY-FOURTH ANNUAL REPORT OF THE LADIES' UNION CHARITABLE SOCIETY (INCORPORATED). Conducting the Lawrence General Hospital and Children's Home, for the Year Ending Sept. 30, 1909. Organized Oct. 5, 1875. Lawrence, Mass.

ST. LUKE'S HOME AND HOSPITAL IN THE CITY OF UTICA. Report for the Year ending Oct. 1, 1909, with the names of Officers for Ensuing Year. Paper. Pp. 47, with illustrations.

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS. Transactions of the Fifth Annual Meeting, Washington, D. C., May, 1909. Paper. Pp. 429.

WOMAN'S HOSPITAL IN THE STATE OF NEW YORK. 54th Annual Report for the Year 1909. Paper. Pp. 71, with illustrations.